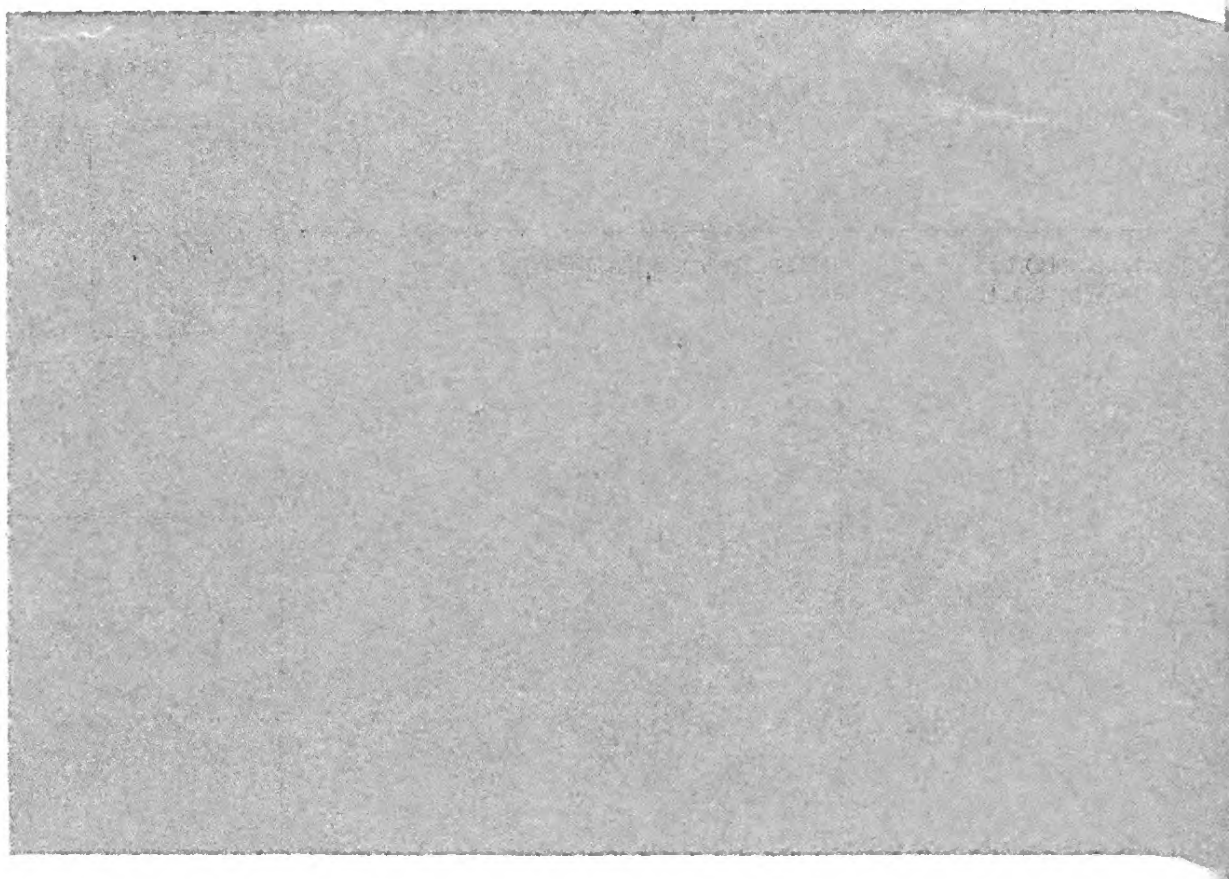


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North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. V.

CAIRNS, 1st MARCH, 1937

No. 49

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns,
usually on second Monday in each month, at 8 p.m.

BUSINESS FOR NEXT MEETING, Monday, 8th March, 1937.

Lecture by Mr. A. Bruce Cummings, "Submarine Cinematography of the Great Barrier Reef."

Reports of Meetings:

14th September, 1936: Annual General Meeting. The following officers were elected: President, Dr. H. Flecker; Vice-Presidents, Miss M. E. Hooper, Mr. J. G. Brooks; Hon. Treasurer, Mr. R. L. Hunter; Hon. Secretary, Mr. J. Wyer; Hon. Auditor, Mr. S. Dunn. Messrs. T. Walsh, M. Auricchio and R. J. Gorton were elected on the Committee.

Mr. Cyril T. White, Government Botanist, gave "A General Talk on the Flora of North Queensland."

12th October, 1936: The Annual Address by the President, Dr. H. Flecker, which was deferred from the preceding meeting was read, the title being "North Queensland, a Naturalist's Paradise, and the Activities of the North Queensland Naturalists' Club."

Mr. J. Foster, of 121 Esplanade,

Cairns, was then elected a member and to fill the vacant seat on the Committee.

9th November, 1936: Mr. Chas. Barrett, C.M.Z.S., delivered an address giving his reminiscences as a naturalist in Australia.

Mr. E. M. Boden, 17 Digger Street, Cairns, was elected a member.

14th December, 1936: Dr. H. I. Jensen gave an address illustrated by charts and diagrams on the Geology of North Queensland.

8th February, 1937: Mr. V. H. Chargois, F.R.S.A., gave an address entitled "Art in Relation to Natural History," which was illustrated.

Mr. S. Egan, of Kuranda, was elected to membership.

Mr. T. Walsh was elected to fill the vacancy caused by the relinquishment of Mr. R. L. Hunter as Hon. Treasurer.

INSECT FAUNA OF THE UPPER WALSH RIVER, NORTH QUEENSLAND.

By R. C. CANNON, B.Sc.Agr.

Continued From Vol. IV., Page 47.

Of the Homoptera the most obvious members are the cicadas which are to be heard drumming in the trees during the summer months. Examination of the twigs of trees and shrubs will reveal Membracids, Eurybrachids and Ricaniids. One small green Jassid is common on tomatoes

and tobacco, where the typical "tattoo" marks show where the insect has been feeding.

Coleoptera:

This order forms a very distinct and compact group characterised by the highly specialised form of the

forewings as hardened "elytra." The beetles are well represented here, which is only to be expected of the dominant order of the *Insecta*. They are fairly voracious feeders, many of them being harmful to man in one way or another. The dominant families would probably be the *Curculionidae* and the *Chrysomelidae*.

A search under the bark of trees will yield numbers of more or less flattened Carabs, Tenebrionids and Cicindelids. Under logs and stones one will find *Carabidae*, *Tenebrionidae* and a number of *Curculionidae*, all of a rather dull appearance. Foliage, on the other hand, will yield some prettier species of "elephant beetles." Amongst the leaf-eaters there are a large number of *Chrysomelidae* which comprises some elegant and bizarre forms. Of this family the curious group of primitive *Casidinae* or tortoise-beetles is represented by some dozen or more species. They have the head concealed beneath the prothorax, which, together with the elytra, has a definite flange around its margin.

The scarabs are common at certain times of the year. Most are rather drab forms, though the pretty *Calloodes grayanus* Wh., is not uncommon on eucalypts and often flies to lights. The coarse grasses often harbour beetles of many groups among which was a single species of *Rhipidophoridae* which was accidentally taken resting on a stalk of grass.

Probably the most beautiful of all insects are the *Buprestidae* or "jewel beetles." Several very pretty species are to be found, some of them being quite common. There is one very pretty species with the pronotum and elytra a deep metallic blue, with a red head. Boring into cypress pine is *Diadoxus* sp. which is quite common.

Hymenoptera:

Of all groups of insects this order is probably the least harmful and the most beneficial. With few exceptions they are harmless to man in the ordinary way. Thousands of species are predacious or parasitic on insect pests and constitute the principal factor in the maintenance of the balance of insect life.

The commonest representatives of the order are several families of wasps such as *Thynnidae*, *Scoliidae*, *Vespidae* and *Sphecidae*. The commonest representatives of the sub-order *Apoidea* are a carpenter bee (*Xylocopidae*) and the very common native bee, *Trigona carbonaria* Sm., which quickly locates any fresh paint, and in a short time will remove a complete coat, the linseed oil of which is apparently utilised as a source of raw material for the preparation of its "propolis." Ants occasionally prove an annoyance by removing freshly planted tobacco seed to their haunts, while several species are troublesome in the house for some months of the year.

Neuroptera:

This is a fairly insignificant group with species of ant-lions and green lacewings (*Chrysopidae*) occurring in this area. The finest specimen seen was a single species of *Psychopsis* collected at a light.

Diptera:

This is undoubtedly the most important order of insects insofar as they directly and indirectly affect the health of man. Only casual mention of these will be made in passing. The ubiquitous house-fly is, of course, present together with a number of other *Muscidae* and *Anthophoridae*. In certain seasons March flies are most troublesome and can inflict some very painful "bites." The several species of mosquitoes are by no means as common nor as troublesome as in the coastal regions. A few species of *Trypetidae* attack native and cultivated fruits.

Lepidoptera:

This order is a very large one comprising both butterflies and moths, the latter comprising countless pests of mankind. The larvae of most *Lepidoptera* feed on plant tissues. In this region very few butterflies are to be seen and comprise mostly rather dull forms, with a few skippers. As against this we have a fairly large range of both day and night-flying moths. Most of these are harmful to crops, in particular the stem-borer, *Phthorimaea heliopa* Low., and the

leaf miner, *Ph. operculella* Zell., of tobacco.

With a very meagre amount of entomological attention such as this area has had, no attempt can possibly be made to assess the relative importance of the various orders and groups of insects of its fauna. The best that one can do at present is to point out the general types which have been found from time to time and the gen-

eral characteristics of its insect fauna. There are doubtless many species in the area yet to be collected as many orders have been viewed with no more than passing interest.

Despite the proximity to the Atherton Tableland with its tropical flora and fauna, the area bears no resemblance to its near neighbour, the intervening ranges forming a fairly effective barrier.

CLEISOSTOMA TRIDENTATUM Lindl.

(=*C. cornutum* Rupp.)

By The Rev. H. M. R. Rupp.

In this Journal for December, 1935, I described a small *Cleisostoma* collected by Dr. H. Flecker near Ravenshoe as a new species—*C. cornutum*. Only two flowers were available, and ultimately these proved to be too much damaged by their long journey to provide reliable material for examination. I did not realise this until Dr. Flecker's plant produced flowers in my bush-house at Raymond Terrace, N.S.W. (September, 1936). I then found that they did not tally

with my drawings, and that the "horns" of the labellum were obviously shrivelled lateral lobes. I am now fully convinced that the Ravenshoe orchid must be placed in Lindley's *C. tridentatum*. It is a short-stemmed form, with flowers relatively larger and more richly coloured: but the identity of the floral details with those given by Fitzgerald is complete. I much regret having made this mistake.

NEW NORTH QUEENSLAND RECORDS OF ORCHIDS.

Pterostylis curta R. Br.

Pterostylis ophioglossae R. B. var *collina* Rupp.

By The Rev. H. M. R. Rupp, Raymond Terrace, N.S.W.

1. Towards the close of July, 1934, Dr. H. Flecker sent for inspection a dried specimen of a *Pterostylis* which he had collected at Ravenshoe, on the Atherton Tableland. The plant was growing in company with others, near a road in open, grassy country, the soil being a reddish clay. As the specimen was a solitary one and had to be returned, I was unwilling to risk damage; but superficial examination suggested a very well-developed form of *P. curta*. The "Queensland Flora" only records this species from "southern localities." (The form listed by Bailey as "var ? *grandiflora*," from the Brisbane River, is almost

certainly *P. Baptistii* Fitzg., a species subsequently recorded by Bailey himself in "Q. Agr. Journ.," July, 1904.) Ravenshoe, being more than 1000 miles to the north, I felt doubtful of expressing a definite opinion. The only *Pterostylis* recorded by Bailey for N. Queensland is his own *P. depauperata*, and Dr. Flecker's plant did not tally with the description of that at all. Yet the flower seemed very large for *P. curta*—larger than any I had seen from S. Queensland or the southern States, with the exception of a S. Australian specimen.

In June, 1935, Miss Phyllis Matthews sent a number of the plants to

Dr. Flecker from Ravenshoe, and of these some were sent to me. A freshly-pressed flower in excellent condition was forwarded to Dr. R. S. Rogers for inspection, and he agreed that it seemed to be *P. curta*. I grew the tubers, which had been sent in a pot, and early this year (1936) several plants appeared. One threw up a flowering stem, which duly produced a very fine flower in the third week of June. It lasted until July 26.

My first impressions of this living flower raised some doubts as to its identity with *P. curta*. Apart from the point that it was larger than any *P. curta* hitherto seen by me, the petals and the labellum seemed much broader, and the latter lacked the very pronounced and curious "twist" which is so characteristic of the species: moreover, instead of tapering to a somewhat obtuse apex, it was mucronate. Had I discovered such a flower in N.S.W. I should have been disposed to place it as a natural hybrid between *P. curta* and *P. Baptistii*. Subsequently, however, the labellum did develop a slight twist, and I now have no doubt that the Ravenshoe plant should be included in *P. curta*. The sepals and the column are typical; and the distinctions in petals and labellum would not warrant separation. Dr. Flecker's discovery is none the less interesting,

and should stimulate a search for this and other species of *Pterostylis* elsewhere in the north.

2. In July, 1936, and again in August, I received from Mr. H. Thorogood, of Kelsey Creek, Proserpine, a small Greenhood which he thought might be *P. concinna* R. Br. Examination soon satisfied me that the labellum, however, was forked as in *P. ophioglossa* R. Br.; and it was, with considerable surprise that I found Mr. Thorogood's plant to be identical with a small form of *P. ophioglossa* from the hills flanking the Paterson Valley in N.S.W., which I had named *var collina* (Proc. Linn. Soc. N.S.W. liv. Part 5, 1929). The surprise was not that *P. ophioglossa* should appear in N. Queensland, since I believe it is recorded for New Caledonia: but that it should appear in this particular form, which had not hitherto been known except at Paterson, at least 1200 miles away. *Var. collina* differs from the type in the consistently smaller flower, the upper portion of which is a rich red-brown. The galea is very shortly acute, and the paired sepals are not greatly prolonged. The type form is common in S. Queensland, and extends to the S. Coast of N.S.W., sometimes—but rarely—ascending the Dividing Range and appearing on the western slopes (e.g., Warialda).

ALTERATIONS IN ORCHIDACEAE.

By W. H. Nicholls.

Bulbophyllum intermedium, Bail.

F. M. Bailey described the broad and short-leaved form as a distinct species under the above name. But, after several seasons' experience with plants received from Queensland I cannot discover any material difference from the type form of Mueller's *B. Shepherdii*. The flowers are exactly alike in every detail, and the leaves revert, after several years, to the slender form which characterises (more or less) Mueller's plant.

Habitat: Tambourine North, Queensland.

B. Shepherdii, F.v.M., *var. intermedium* (Bail) Nich.

Dendrobium eriaeoides, Bail.

This plant has long been known under the above name, but it was altered by Rolfe in "The Orchard Review," xvii, (1909), 95, and is now *Eria eriaeoides* (Bail.) Rolfe.

North Queensland Naturalist

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Vol. V.

CAIRNS, 1st JUNE, 1937.

No. 50.

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns, usually on second Monday in each month, at 8 p.m.

BUSINESS FOR NEXT MEETING, Monday, 14th June, 1937.

To be announced later.

Reports of Meetings:

8th March, 1937: Dr. Flecker exhibited a new grass, *Eriachne setosa*, not previously recorded in Australia, found growing in Cairns.

12th April, 1937: A paper entitled "Submarine Views of the Great Barrier Reef," by Mr. A. Bruce Cummings was read.

10th May, 1937: A fine series of photographs illustrating the activities of the American Archbold Natural

History Expedition to Papua, showing the different types of country from the lowlands to a height of 13,000 feet, where the expedition was encamped for a month, were shown by Mr. L. J. Brass.

Mr. John Foster was elected Honorary Secretary of the Wild Nature Show, to be held on 4th and 5th September next.

Miss J. Richardson, of Cairns, was elected a member.

SUBMARINE VIEW OF THE GREAT BARRIER REEF.

BY A. BRUCE CUMMINGS.

The "Cairns Post" of March 2, 1937, described the construction of our diving cylinder, from which we were able to obtain submarine motion pictures. and now I shall go on to tell you something of our experiences during these trips to the submarine gardens of the Great Barrier Reef. Stepping into a flattie, we are rowed out to the "Bohemian," the boat being specially fitted up from which to work the diving apparatus. We climb aboard, the engine is started, and off we go to where the diving cylinder is anchored. Coming alongside, the cylinder chain

attached to it is passed through the pulley block, and towing the cylinder, we start out on the day's work. The "Bohemian" chugs along slowly now, making very hard work of it, as the cylinder trailing behind, acting as a sea anchor, slows us down to about quarter speed. With a look-out man perched up on the cross-arm of the mast, directing the course, we thread our way in and out of the reefs. A sharp look-out must be kept lest we run on to a peak of submerged coral rising up to within a few feet of the surface at low tide, and tear a hole in

our boat. Towing the cylinder makes the steering of the boat very difficult, it being slow to answer the rudder, and more than once we expect to hear the sound of copper plates being ripped off. Once out in the deep water, we are safe, and giving the engine more throttle, we make for a suitable location.

Some time passes. The look-out man shouts that there is good coral straight ahead. A couple of us climb on to a platform in the bow and gaze into the crystal waters. Deep down are masses of coral rising up into fantastic shapes. The engine is thrown out of gear, the boat quickly comes to rest, and an anchor is thrown over. From the flattie, and with the aid of a waterscope we explore the locality for a suitable place to dive with a flat spot, if possible, for the cylinder to rest on. The boat is brought into position; one forward and two stern anchors are put out. Opening up the cylinder, the camera gear is lowered into it, the airpipes are connected, and the air pump started. A strong northerly wind makes the sea quite choppy. Sitting inside the cylinder, while the lid is being screwed on, and the extra ballast of lead weights is being placed in position, is a most uncomfortable experience, somewhat resembling being mounted on a bucking broncho whilst semi-blindfolded, then caught in cross currents, the cylinder spins first in one direction and then in the other.

A voice through the exhaust air tube asks if I am ready to go, and, half seasick, I reply, "Lower away." Once away from the surface, all boisterous motions cease, and the cylinder sinks so gently down that there is no feeling of movement, and I am about to call up the air tube, which I have clutched in my left hand, when the peak of coral mountain comes into view, and I know that I am still sinking. Myriads of beautifully coloured fish appear; they seem to be getting more numerous, and, if possible, more brightly coloured. A pair of feather stars (*Crinoidea*), feeding on an outstretched branch of staghorn coral (*Acropora hebe*) wave their arms in welcome as I pass by; they are so close that I feel tempted to pick them

off, but, a second later, the sound of coral being crushed beneath me and a metallic ring inside the cylinder tells me that I am on the bottom. But, what has happened? A corner of the triangle carrying the lead ballast has come to rest on a coral boulder, thereby giving the cylinder a list to one side, almost throwing me off my seat. Calling up the air tube, I asked to be raised a little, and to go forward. When over the desired place I give the order to lower away, and this time I come to rest on the only flat surface within sight.

Swinging the camera to one side, I look through the inch-thick glass window into a new world. The sight is awe inspiring, and baffles description. Cliffs of coral rise up on either side—a brilliant patchwork of color, with giant fan-shaped corals jutting out here and there, some of these being sixteen feet in diameter, and beneath them in the shadows are large fish, scarcely moving, waiting patiently for their lunch. At the far end of the valley tall soft corals (*Alcyonaria*) resemble a forest of fir trees as the ocean currents sway them from side to side. Small caves lead back into the cliff, the entrance to them decorated with stalactites and stalagmites growing in riotous profusion, while, above and around as far as I can see, are clouds of darting, flashing fishes of every imaginable (and unimaginable) design. Some of them, I believe, never before seen by man, are here in this world beneath the sea. They are flat, oval, round and square, striped, spotted, and, in size, from microscopic dimensions to a huge estuarine cod (*Epinephelus tauvina*) weighing about three hundredweight. "Are you O.K." comes a shout down the air tube from the attendant, and, with a jolt, I am brought back from this world of wonder. "I am all right," I answer, "but it's terribly hot down here. Can you give me more air?" My shirt and shorts are saturated with perspiration, and the condensation on the walls of the cylinder makes zig-zag tracks as it trickles down. I screw myself round to look through the two observation windows behind me. A shoal of large fish, with silver bodies and gold tails, are

there. They appear to be cast in crystal glass, for they remain almost motionless for some considerable time, all facing the same direction, until a current carries them forward a few feet, and after a pause, brings them back again, still maintaining their formation.

With dramatic suddenness panic breaks upon this peaceful scene, and in an instant there is not a fish visible. They have taken refuge in the coral. We don't have to wait long to learn the reason, for out of the blue mist of the distance swims a huge tiger shark (*Galeocerdo arcticus*), coming so close that I can see a sucker fish (*Echeneis naucrates*) attached to it, and the sight is so comical, I almost laughed aloud, but like the fish in the coral, I just looked as the shark slowly and sullenly goes on its way. Heads appear from every crevice in the coral, then dart back again. A few of them swim from one clump to another, more follow, and soon the whole fish community is playing and feeding as happily as before they were so rudely interrupted. A pair of fish with elongated bodies of glittering gold, black heads and tails, dart down past the window and nibble at some seaweed.

After directing the crew to change my position so as to view at close range the coral on my left side, a strange sight presented itself. An army of stream-lined fish are swimming, head downward, across the face of a coral boulder. These quaint little chaps, with bodies shaped like a Bengal razor, and between three and five inches long, and appropriately called razor fish (*Centriscus scutatus*), move in military formation. They swim vertically. Their tails are merely spikes, which can be bent to any angle, and appear to control the ascending and descending apparatus. Their mouths are long tapering tubes, being most suitable to thrust down into the finger-like corals in search of food. Being equipped with several pairs of fins, they are capable of the most unique manoeuvres. They all keep together, maintain the same distance apart, and ascend or descend in perfect unison. When on the move they resemble a unit of soldiers, as

they wheel and turn as one. While looking at them as they approach the cylinder, they are like a lot of sticks about an eighth of an inch thick, but as they turn, they present themselves broadside on, showing amber-coloured bodies, about three-quarters of an inch wide, with a black stripe running down the centre from tail to head.

Moorish Idols (*Zanclus canescens*), with their long flowing white streamers, play follow the leader through the coral forest, which resembles shrubs that have shed their leaves. Gaily-painted parrot fish (*Labridae*) nibble at the coral. A number of inquisitive little striped fish, about an inch long, come right up and look in at the window, swimming up and down, with their mouths pressed against the glass. They evidently saw their reflections as their numbers increased until they blotted out the light. Sting rays (*Dasyatidae*) swim leisurely along, close to the bottom, and cover themselves with sand, leaving only their eyes and barbed tail visible.

Clinging to the sides of the coral boulders are giant sea anemones (*Stoicactys*). Living under ideal conditions in these tropical waters, anemones grow to as large as two feet across, resembling huge cactus dahlias. Hidden in the anemones flowing tentacles are a pair of small anemone fish (*Actinicola pereula*), decked out in all their war paint, for they are the working partners of the anemone, and assist it in the search for food, receiving its share of the booty.

Down below a cold green light envelops all. The sun's rays, being broken up by the waves, are converted into hundreds of small search-lights, and their pencil light beams playing on the fantastic shapes of the coral and the gleaming fish, presents a sight which beggars description. A call from above tells me that the breeze has freshened, but here it is none too rough to tarry longer. This seemed difficult to understand, because down below all is quiet and peaceful, except for an occasional current surging through the passages in the coral pool. Whilst being brought to the surface, an angel fish (*Chaetodon auriga*), dressed in royal blue and

silver, with black velvet trimmings, darts from its mansions in the coral and swims close to the window, showing off its finery while its antics plainly say: "Come down and see me again some time." Nearing the surface the buck-jumping starts again, but not for long. The wing bolts are quickly released, with some assist-

ance I scramble out, feeling very cramped after three and a half hours down below. There is more work to be done here, so we leave the cylinder securely anchored, and in a few minutes are heading for the palm-fringed island, tired, but very satisfied with the day's work.

A RARE ORCHID.

BY W. H. NICHOLLS.

Epipogum nutans, Ldl.

This rare ground orchid is of more than normal interest. It is a leafless saprophytic species—the sole representative of the genus found in the new world, viz., Australia, Tropical Asia and Africa.

The few other species are found also in scant numbers throughout Europe, which includes, also, Great Britain.

I am indebted to Dr. H. Flecker, of Cairns, North Queensland, for my specimen. The colour of the flowers was just a shade paler than the all-pervading hue of the whole plant, i.e., a light straw colour. Most descriptions record the blooms as "white."

R. D. Fitzgerald, F.L.S., in his work on Australian orchids (Vol. v), figures the labella segment with reddish markings, but in my specimen the flowers lacked this additional attraction.

Epipogum nutans is entirely leafless, but the stem is adorned with several closely-appressed bracts; the tuber is darkly-hued and rhizome-like.

The flowers are racemose in a more or less drooping habit; labellum sessile—adnate to column base, ovate deeply concave; margins undulate, tip pointed; spur longer than in Fitzgerald's figures and obtuse; disk broad, with minute marginal glands; column very small, vizer-like, with a very prominent appendage.

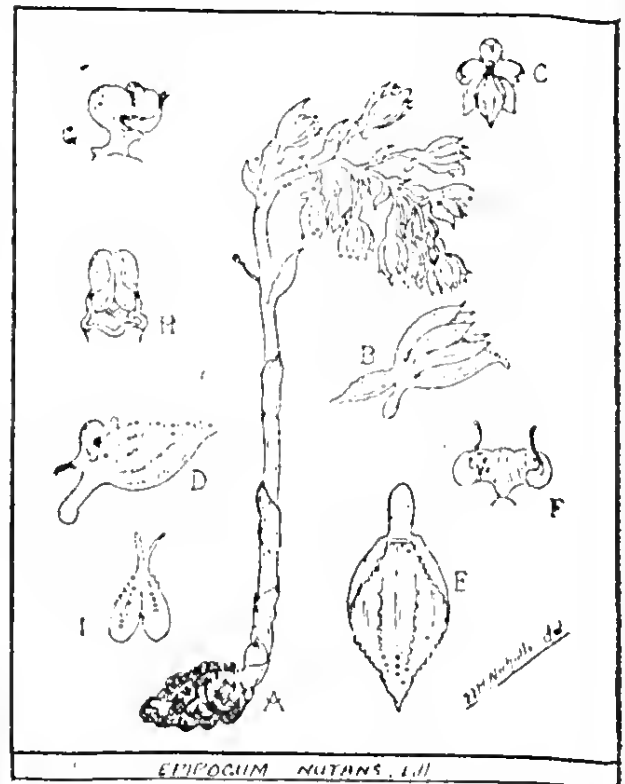
Flowering during late spring.

Distribution in Australia: North Queensland, southwards to Northern New South Wales.

My material was collected in "Grass Clearing, Chuchaba (M. Pearson), 29/11/36.

The specimen was about 6 inches high.

KEY TO PLATE. *Epipogum Nutans*, Ldl.



- Fig. A.—A specimen from Chuchaba, North Queensland. (No 2615 Dr. Flecker).
 „ B.—Flower from side.
 „ C.—Flower from front.
 „ D.—Labellum and column from side.
 „ E.—Labellum from above.
 „ F.—Anther with pollinia attached, opened out.
 „ G.—Column from side.
 „ H.—Column from front.
 „ I.—Pollinia.

The North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. V.

CAIRNS, 1st SEPTEMBER, 1937.

No. 51

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns,
usually on second Monday in each month, at 8 p.m.

BUSINESS FOR NEXT MEETING, Monday, 13th September, 1937.

Fifth Annual General Meeting. Election of Officers. Annual Report, Etc.
Annual Address: "Vernacular and Biological Nomenclature."

REPORTS OF MEETINGS:

14th June, 1937.

New members elected:

Miss Elizabeth Henry, "Bellenden,"
Murray River, Tully.

Mr. Springall, Tait River.

Mr. E. W. Priest addressed the meeting and described the different features of a trip through the interior of North Queensland, illustrating his lecture with photographs.

Exhibits.

Giant Fish Killer (*Lethocerus indicus*)—Mr. F. R. Morris.

Bug (*Tectocoris lineola*)—Mrs. Dalziel, Atherton.

Spider (*Nephila maculata*). Web capable of entangling small birds—R. Birch.

12th July, 1937.

New member elected: Mr. Louis H. Jezard, Proserpine.

A very well-attended meeting was held to hear Mr Tom Marshall's address on Fish, which was illustrated by lantern slides. A feature of special interest was the particularly fine water

colour drawings of a considerable number of fish, made by the lecturer during a visit to Palm Island the previous week, all drawn from living specimens. These will be published in due course.

Attention was drawn to the destruction of a cassowary in the Mossman Gorge, which is a sanctuary for all native animals, also to the use of bardicoots as prey in the training of dogs for coursing. Steps were taken to limit these practices.

9th August, 1937.

Mr. A. F. Basset-Hull addressed the meeting and traced the history of the Taronga Park Zoological Gardens from the time the collection was removed from Moore Park and gave a lucid account of the rapid improvement in all directions and particularly in finance resulting from the change. In addition, some interesting remarks on various petrels and other birds were made.

An appeal was made by Mr. B. O. Balfe to endeavour to secure the protection of the koala in this state for all time.

The unsatisfactory treatment of tourists to Green Island was expressed and it was resolved that steps be taken to advise all tourists that the most satisfactory way to see the reef was to walk over it at low tide, and to be prepared to do so.

Exhibit.

Frog Fish (*Pseudobatrachus dubius*). Mistaken for Stone Fish.

Caterpillar of *Eriboea pyrrhus sempronius*—Miss E. Henry, Tully.

FIFTH ANNUAL WILD NATURE SHOW. This will be held at the City Baths, Cairns, on 3rd and 4th September next. For the first time, arrangements are being made for the exhibition of native flowers from the southern states.

A DIMINUTIVE NORTH QUEENSLAND ORCHID.

OBERONIA PUSILLA, Bail.

By the Rev. H. M. R. RUPP

So far as I am aware, this little orchid has not previously been figured. A plant was sent to me in September, 1935, by Dr. H. Flecker, who collected it from Malaan Road, near Ravenshoe, on the Atherton Tableland. The plant has done very well under ordinary bush-house conditions at Raymond Terrace, N.S.W., and the accompanying sketch depicts it as it is two years after it left North Queensland. It is (at the present time) growing on a *Banksia* stick. It has a branching habit, and is very unlike either *O. iridifolia* or *O. Titania*, but the floral structure is almost identical with that of the former, except that the perianth segments are entire. The leaves are semi-cylindrical and succulent. The raceme is comparatively short and few-flowered, not hanging down in a long, densely-flowered spike as in our two other Australian species. F. M. Bailey's specimens were obtained at an altitude of 4,000 feet on Bellenden Ker. He does not mention the branching habit, and the plants seen by him were apparently younger and smaller than Dr. Flecker's.



OBERONIA PUSILLA, Bail.

A plant, natural size, and an enlarged flower (front view).

NOTE.—This orchid was found in the jungle, densely distributed over the branches at the top of a fallen tree, on which were also found *Bulbophyllum Macphersonii*, Rupp. and flowering specimens of *Cleisostoma tridentatum*, Lindl., the latter being the only examples of this species yet recorded from North Queensland.

—H.F.

THE RAMBLINGS OF A NATURALIST.

By J. G. BROOKS, B.D.Sc.

It is hoped that these items, though of not great scientific value, will prove of interest to the readers. An endeavour has been made to cover a number of branches of Natural History.

Collecting Natural History Specimens

Most people who adopt Natural History as a hobby collect large and pretty specimens, which is not a good idea, from a scientific point of view. Large specimens are easily set and handled and present a good appearance, but in a short time, available space for storage is soon taxed. As an example, not very many Hercules moths can be placed in a glass case, whereas thousands of ants could be placed in the same sized glass case.

Many of the minute specimens are more handsome than the larger ones but unfortunately have to be viewed through a microscope. To obtain and classify specimens new to science, one has to collect the small-sized specimens. They take longer to find, set and classify, but do not take much storage space and when arranged surpass the large-sized specimens for beauty.

Set-backs to the Collector.

Collectors in a climate such as that of Cairns are doomed to many disappointments with their collections. The hot, damp climate is ideal for fungus growth and one has to be continually cleaning specimens of fungus (mildew). This is comparatively easy on the plain, smooth types but those with the powdery types of coating are greatly damaged. Equal parts of carbolic acid and alcohol destroy the fungus. Thymol is suggested for cabinets but the writer has had no success with it. A little research work on this set-back will be appreciated by many collectors.

Another cause for much alarm is insect pests, particularly the museum beetle *Anthrenus varius* Lea, Family *Dermestidae*, which, if not controlled, will destroy the bodies of numerous specimens in quick time. The *Psocids* (Book-lice) also do much damage in collections, though their damage is confined to the hairs, etc., on the specimens.

Napthalene has been a favourite for prevention of insect pests, but it is not efficient unless the cabinet is perfectly air-tight, which is practically an impossibility in a damp, hot climate. Paradichlor-benzene has proved to be the best insecticide that the writer has tried, although a mixture of napthalene, paradichlor-benzene and thymol boiled together and set in blocks is recommended.

Fruit Fly Collecting and Breeding.

A collector is more successful in obtaining delicate specimens by breeding than by collecting them with a net. At the same time he obtains a greater variety of specimens by the former method.

Fruit-flies (*Trypetidae*) are delicate specimens which are a menace to both cultivated and native fruits. A well-represented collection can be obtained by gathering infected fruits and breeding the flies from them. The greater the variety of fruits, the greater is the variety of fruit flies.

The fruits are best stored in glass jars. It is advisable to place sawdust on the bottom of the containers to absorb the moisture which results from the fermentation of the fruits during the process. The jars should be covered with cheese-cloth; this permits the circulation of air, but prevents the specimens from escaping.

Fruit Bats—Method of Drinking.

Whilst sitting on the bank of the Babinda Creek at Happy Valley one evening, I had the pleasure of observing numerous fruit-eating bats (flying foxes) drinking.

The type was Gould's Fruit Bat (*Pteropus gouldi*, Peters)—the common, brown and black species of North Queensland.

The bats were flying up the creek and at a shallow part of the creek they dipped and dragged their tongues along the surface of the water for a few yards. The process created a hissing noise as if something was tearing and left small ripples which were soon swallowed by the onward flowing stream.

Female Supremacy.

When dragging ponds and creeks for aquatic insects, one finds many interesting specimens, amongst them are the water-bugs—*Spherodema rusticum* Fabr., Family Belostomatidae. They belong to the same family as the Giant Fish Killer (*Lethocerus indicus* Stal.) but are much smaller, being about an inch in length and three-quarters of an inch broad and fairly flat. Some of the specimens will be found to have their backs covered with eggs—these are the males.

When a female is ready to deposit her eggs, she seizes the male and firmly attaches the eggs to his back thereby sealing his wings together. This makes the male a prisoner to the particular pond in which he is, whereas the female is free to leave the water and fly where she chooses. When the young hatch, the male has to rub the egg shells from his back, and until successful, is a prisoner.

The Dyeing of Ferns.

When ferns are dried and pressed, they usually fade. Their colour can be retained by a simple process, which is as follows:

Make a saturated solution of copper acetate and glacial acetic acid, add two or three parts of water to one part of the solution. The ferns are then boiled in the solution until the desired colour is obtained.

During the boiling the ferns first lose their colour, due to the loss of the chlorophyll, but then the copper acetate replaces it and the fern can be returned to any desired shade of green.

Dunk Island.

To the writer, Dunk Island is a gem in the reef-studded Pacific Ocean. Most of the island is still in its virgin state, although a small part has been cleared with the advance of land development. Not very much success resulted from an insect-collecting point of view, although a number of specimens were taken around the electric lights of a night-time. Marine water-striders, bugs of the family *Gerridae* were common, particularly about the fish trap.

The spear and woomera proved an efficient means of obtaining fish for bait, and in the hands of the aboriginal residing at the island, was a deadly weapon.

What appealed to the writer most, was the verse on the grave of the Beachcomber (the late E. J. Banfield) and this should be a fitting place to quote it as it may help to explain the oddness generally applied to Naturalists.

Edmund James Banfield
(The Beachcomber)

Born Liverpool, England, 4th Sept., 1852

Died Dunk Island, 2nd June, 1923.

"If a man does not keep pace with his companions,
Perhaps it is because he hears a different drummer;
Let him step to the music which he hears."

The North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. VI.

CAIRNS, 1st DECEMBER, 1937.

No. 52

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns,
usually on second Monday in each month, at 8 p.m.

BUSINESS FOR NEXT MEETING, Monday, 13th December, 1937.

Address by Mr. B. O. Balfe: "Care of Native Animals in Captivity."

REPORTS OF MEETINGS!

6th September, 1937.

Annual General Meeting.

Annual Address by President, Dr. H. Flecker, entitled "Nomenclature, Vernacular and Biological."

Election of Officers.

6th October, 1937.

Mr. Tom Tennant, Editor of Viewpoint, Townsville, gave a lecture entitled "Blackfellow from Early Times in Australia."

Miss Neuhaeuser exhibited a collection of skins of marsupials and rodents collected around Ravenshoe.

8th November, 1937.

Mr. Moase gave a lecture, illustrated by photographs, entitled "Uses of Animal Photography."

New Members elected:

Rev. Kernke, Yarrabah.

Mr. R. V. Oldham, Pt. Moresby.

Mr. S. Simpson, Cairns.

Mr. H. Howard, Babinda.

Mr. Geo. Sibley, Gordonvale.

Mrs. J. A. L. Sides, Watsonville.

Announcement.

Messrs. N. H. Seward Pty. Ltd., of 457 Bourke Street, Melbourne, are offering a helpful book, "WHAT BUTTERFLY IS THAT?" by G. A. Waterhouse, for 5/- plus postage. The usual price of it is 12/6. The book covers the butterflies of Australia and is useful as a reference book when classifying specimens.

BIRDS ON THE TIDAL FLATS AT CAIRNS.

By A. J. MORAN.

Some of the wading birds remain on the sea-front at Cairns year in and year out—others just call in for a rest and sup on their great migratory flight to and from Siberia, where they go every year to breed on the plains of Russia, where the melting snow and ice uncover food in plenty. Some of the birds upon their return flight go no farther than Cairns, others continue on as far as

New Zealand. How they find their way across the Tasman's thousand miles of ocean is only one of the wonders of Nature that make us think.

There are fifty Australian birds included in the important order of Waders and most of them are similar to the birds frequenting other parts of the globe, as shore conditions all over the world are somewhat alike. Twenty-eight

of these birds are considered visitors to Australia and at least twenty-three call at Cairns and most of this number are here now—having arrived only last month (October) from their long Northern flight. The Golden Plover (*Pluvialis dominicus*), a lovely little bird in brown with golden spots is here, having arrived somewhat late, also the Australian Dottrel (*Peltohyas australis*) and the Little Whimbrel (*Mesoscolopax minatus*), all looking very tired indeed. They may have been delayed by the trouble in Mongolia!

The Sea Curlews, Snipes and Godwits appear to have stood the journey much better.

The Black-fronted Dottrel (*Charadrius melanops*) is especially busy hunting for food and turning over pieces of bark, etc., at a great rate. He is very hungry and is not so fortunate as the Sea Curlew (*Numenius cyanopus*) and the two Stilts whose long-pointed bill is tipped with nerves so sensitive they can detect food quickly in the soft mud.

The White-Headed Stilt (*Himantopus leucocephalus*) is a very infrequent visitor and only once during twelve years have I seen it here.

A solitary Black Oyster-Catcher (*Haematopus unicolor*) called only once during my observations.

The Silver Gull (*Larus novae-hollandiae*) is the very common graceful bird that you all know so well. It was just as beautiful in the harbour at Singapore and Kobe as it is at Cairns. He is not so well-behaved as he appears. I saw these birds stealing the eggs of noddies and terns at Michaelmas Cay. He is the only real scavenger on the flat and will eat anything. This is the only gull we have in Cairns, but 25 years ago the Pacific Gull (*Gabianus pacificus*) was resident here in large numbers. The Caspian Tern (*Hydroprogne Caspia*) is not plentiful, but nevertheless always here. It is a shy bird and takes shrimps from the surface of the water as it flies over the inlet.

The White-faced Ternlet (*Sterna nereis*) is often in the harbour, especially when there are showers of rain about. This dainty little bird dives at fish from a height of 50 feet—it hovers

in the air like a sparrow hawk. It lays a single egg on the bare, hot rocky islands near the South Barnard Island. There are two other terns nesting on Michaelmas Cay which have only been here once when they were blown in during the cyclone twelve years ago. The Frigate Bird (*Fregata minor*) was also blown at this time and took refuge on the railing of the old City Baths. The late Charles Hedley noticed terns with broken wings on the beach at Green Island and was worried to know the reason and, after careful observation, saw the frigate bird in the act high up in the sky. When the tern would not disgorge fish quickly enough this robber quickly dislocated the wing.

I have got away from the waders and space will not permit me to go much longer. Why not some interested lover of nature list these mud flat dwellers and note their time of arrival and departure? The information is useful and the study fascinating. With an ordinary pair of binoculars the bird is brought quite close and colours are easily picked out. Nature study has gone ahead in leaps and bounds in schools and especially the branch dealing with birds. The Gould Society of Bird Lovers is well established throughout Australia—their objects are:—

- (1) To protect all birds except those that are noxious.
- (2) To prevent the unnecessary collection of wild birds' eggs.
- (3) To disseminate knowledge regarding our birds and to help members, teachers and others to identify them.
- (4) To secure the general use of one common name for each bird.
- (5) To cultivate a more friendly attitude towards birds by fostering an intelligent interest in them and their habits.
- (6) To encourage the formation of bird sanctuaries.

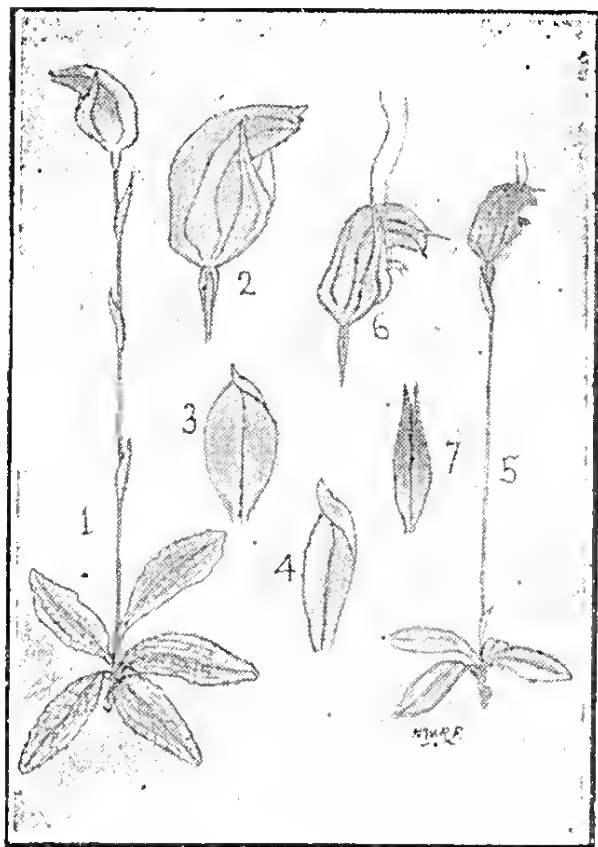
And remember Ruskin said:—

"All the best things and treasures of this world are not to be produced by each generation for itself; but we are all intended, not to carve our work in snow that will melt, but each and all of us to be continually rolling a great white gathering snowball, higher and higher, larger and larger, along the alps of human power."

PHREATIA BAILEYANA (Bail.) Schltr.

By the REV. H. M. R. RUPP.

I gave a brief description of this diminutive orchid in the September number of this Journal, under the name *Oberonia pusilla* Bail. I remarked on its dissimilarity to other Australian species, although the individual flower seemed to me very like that of *O. iridifolia*, Lindl. It is "microscopic" in dimensions, and as I was unaware that Bailey's determination had been challenged, perhaps I did not make the best use of the limited material available for critical examination. Dr. R. S. Rogers writes under date 8/10/37: "Bailey placed the plant in the 'wrong genus, and in 1903, Rolfe referred it to *Phreatia*. Thus in that year it became *Phreatia pusilla* (Bail.) Rolfe. Later still, Schlechter discovered that Rolfe's name had already been appropriated for another plant, and again changed the name to *P. Baileyana* (Bail.) Schltr. (See Fedde Repert. spec. IX (1911) 433.) Rolfe's transfer will be found in Orch. Rev. XI (1903) 344."



PTEROSTYLIS CURTA, R.Br.

The plate was inadvertently omitted from the notes of this plant by the Rev. H. M. R. Rupp, on p. 3 of the issue for March, 1937, Vol. V, No. 49, and is given herewith.

1. *Pt. curta*, plant of the North Queensland form.
2. Larger sketch of flower, side view.
3. Labellum, front.
4. Labellum of type form.
5. *Pt. opioglossa*, var. *collina*, plant.
6. Larger sketch of flower.
7. Labellum.

DENDROBIUM FLECKERI.

By the Rev. H. M. R. RUPP.

This species, which was described, figured, and named in the "Queensland Naturalist," Vol. X, No. 2 (1936), certainly merits some notice in the journal of the North Queensland Naturalists' Club, since it was discovered by Dr. Flecker in 1936 in the Upper Mossman

River jungle in the vicinity of Mount Spurgeon. A flowering plant sent to me in October, 1936, by Mr. C. T. White, the Queensland Government Botanist, settled any doubts in my mind as to whether this *Dendrob* could be placed in any known Australian species;

and Mr. White agreed with my suggestion that it be named after its discoverer, who had previously forwarded a similar specimen. The flowers on Mr. White's plant, though in fairly good condition, had lost something of their colour in the long journey from Cairns to Raymond Terrace (N.S.W.); but this I did not realise until quite recently. The plant is now flowering (Nov. 1937) in my bush-house. I described the sepals as "pale yellowish-green"; but in the fresh state they are a rich apricot. The densely-ciliate labellum, with its purplish-red markings, framed in the setting of apricot sepals, gives this orchid

a very distinctive and beautiful appearance. It is quite an acquisition to our orchid flora, and is worthy of a place in any collection. No perfume was perceptible in the much-travelled flowers last year, but actually *D. Fleckeri* has a strong and pleasing fragrance.

D. Carrii from the same locality, which was described and named at the same time, has not done as well at Raymond Terrace as its companion; but it appears now to be fairly acclimatised, and I hope it may produce flowers next season. The flowers received last year were withered, and had to be artificially "restored" for descriptive purposes.

SOME FURTHER NOTES ON BIRDS OF THE CAIRNS SEASHORE

By J. G. BROOKS, B.D.Sc.

An article in our Journal of January, 1936, by Mr. E. S. Hanks, of the Field Naturalists' Club of Victoria, prompted me to purchase the book, "What Bird is That," by Neville W. Cayley, F.R.Z.S., so that an endeavour could be made to prepare a check list of the visitors to our water front. Our good friend and member, Mr. A. J. Moran, has since produced an article which includes a number of birds not recorded by Mr. Hanks. Incidentally, he has mentioned a number of the varieties observed by myself, nevertheless there are still many to be mentioned, viz:—

RED-BACKED SEA EAGLE (*Haliastur indus* Boddaert). Also known as White-headed Sea Eagle, Rufous-backed Sea Eagle, Salmon Hawk and Rufous-backed Fish Hawk.

WHITE-HEADED STILT (*Himantopus leucocephalus* Gould). Also known as Pied Stilt Longshanks, Stilt-bird and Long-legged Plover.

MASKED PLOVER (*Lobibyx miles* Boddaert).

GREENSHANK (*Tringa nebularia* Gunnerus).

COMMON SANDPIPER (*Tringa hypoleuca* Linne). Also known as Summer Snipe.

CURLEW-SANDPIPER (*Erolia testacea* Vroeg.). Also known as Pygmy Curlew, Curlew-stint.

BAR-TAILED GODWIT (*Limosa lapponica* Linne). Also known as Barred-rump Godwit, Pacific Godwit and Kuaka.

CRESTED TERN (*Sterna bergii* Lichtenstein). Also known as Swift Tern, Ruppell Tern, Bass Strait Tern, Torres Strait Tern and Village Blacksmith.

LESSER TERN (*Sterna bengalensis* Lesson).

LITTLE TERN (*Sterna albifrons* Vroeg.). Also known as White-shafted Ternlet, Black-lored Tern and Sea-swallow.

In November, 1936, a small party of five black swans (*Chenopsis atrata*) was noted quietly resting on the mud flat in front of the Cairns foreshore.
—(H. Flecker)

The
North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. VI.

CAIRNS, 1st MARCH, 1938.

No. 53

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns,
usually on second Monday in each month, at 8 p.m.

BUSINESS FOR NEXT MEETING, Monday, 14th March, 1938.

REPORT OF MEETING:

14th February, 1938.

Mr. B. O. Balfe gave an address entitled "Care of Native Animals in Captivity."

New Junior Member Elected:

John Crossland, Gordonvale.

NORTH QUEENSLAND MUSEUM.

Through the courtesy of the Queensland Government, a quarter-acre block of land in a convenient site in the

centre of the city has been vested in the Cairns City Council for the purpose of a museum. Meanwhile, a Provisional North Queensland Museum Committee has been formed to raise funds for this purpose, under the chairmanship of the Mayor of Cairns, Mr. W. A. Collins. The Cairns City Council has erected a temporary store room for the accommodation of the N.Q. Herbarium and other specimens for the museum. The members of the N.Q. Naturalists' Club have already subscribed £38/2/6 towards the fund for the building.

A NEW LIPARIS FROM NORTH QUEENSLAND.

AND NOTES ON *L. CUNEILABRIS*, F.V.M.

By W. H. NICHOLLS.

LIPARIS FLECKERI, sp. nov.

Rhizoma breviter repens; radicibus fibrosis; pseudobulbis pyriformibus rugose-granulosis; foliis sub-longis lineare - spathulatis, planiusculatis; floribus racemosis, erectis, parvis viridibus numerosis circa 1 cm. diametro; sepalum dorsale erectum concavum; sepala lateralibus anguste-lanceolatis falcatis; petala anguste-lineariter patentia; labellum oblongo-cuneatum recurvatum canaliculatum; basi glandis conspicuis, flavis; columna viridis, subincurvata; anthera obscura.

Rhizome shortly creeping; roots fibrous pseudo-bulbs pyriform with a rugose-granular surface, longitudinally grooved; leaves linear-spathulate, rather long and thinner than in *L. cuneilabris* F.v.M., lamina quite flat; raceme erect; flowers small, green, numerous about 1 cm. in diameter; dorsal sepal erect, concave; lateral sepals narrow-lanceolate falcate; petals narrow-linear, wide spread; labellum oblong-cuneate, recurved, but not markedly so, green deeply-channelled; disk without the

prominent orange-coloured curved lines of other Australian species; base of lamina with two conspicuous conjoined orange-coloured glands; column green erect, only slightly incurved; anther inconspicuous.

This plant is apparently more closely related to Mueller's *L. cuneilabris*, than to other described Australian forms, but differs from that species, chiefly in the very characteristic pseudo-bulbs; the green flowers, (in *L. cuneilabris* the flowers are yellow); a differently shaped and smaller labellum; the labellum-lamina is minus the conspicuous orange-coloured curved lines so noticeable in other forms, but possesses at the base large orange-coloured glands.

I have named the new species after its discoverer, Dr. H. Flecker, of Cairns.

There appears to be very little information available concerning some of the Australian forms—especially is this true of *L. cuneilabris*.

I have examined Mueller's material in the National Herbarium, Melbourne, and I had no hesitation in concluding that the form which I have figured under that name in the North Queensland Naturalist† is the correct one.

The Baron's specimens are somewhat fragmentary—but the flowers are, in their dried condition distinctly yellow (in the new form they dry green)—an attached note in the Baron's handwriting reads "14 April, 1864. Dwarf orchid tope (sic) of

Range under dense scrub; flowers yellow about a foot high. All my specimens almost spoilt coming through the dense scrub."—thus to Mueller's original description is added "*Rhizoma ignotum*."

The above definitely establishes the colour of the flowers in *L. cuneilabris* which is, in this particular instance, of some importance and interest.

H. N. Ridley in his monograph of the Genus *Liparis* 1886, p. 287 reduces *L. cuneilabris* to a variety of *L. reflexa* but Australian botanists rightly regard it as a distinct species.

In connection with the description of *L. cuneilabris* another name (italicised) *Sturmia angustilabris* appears.

"Mueller first proposed to place the Australian representatives under *Sturmia* Reichenb. and in his "Census of Australian plants" (1882) p. 110, this name appears, but in his "Fragmenta" (1864) both genus names are given, but it is generally recognised that *Liparis* has priority"‡

Dr. Flecker writes in reference to his discovery:

"Specimen No. 3080, growing on rocks, greenish-yellow flowers, Belenden Ker—about 4,000 feet above sea level and appears to be moderately plentiful, being gathered into clumps . . . the vegetation in this region though rain forest in type was by no means dense."

† Vol. IV., June, 1936, p. 34.

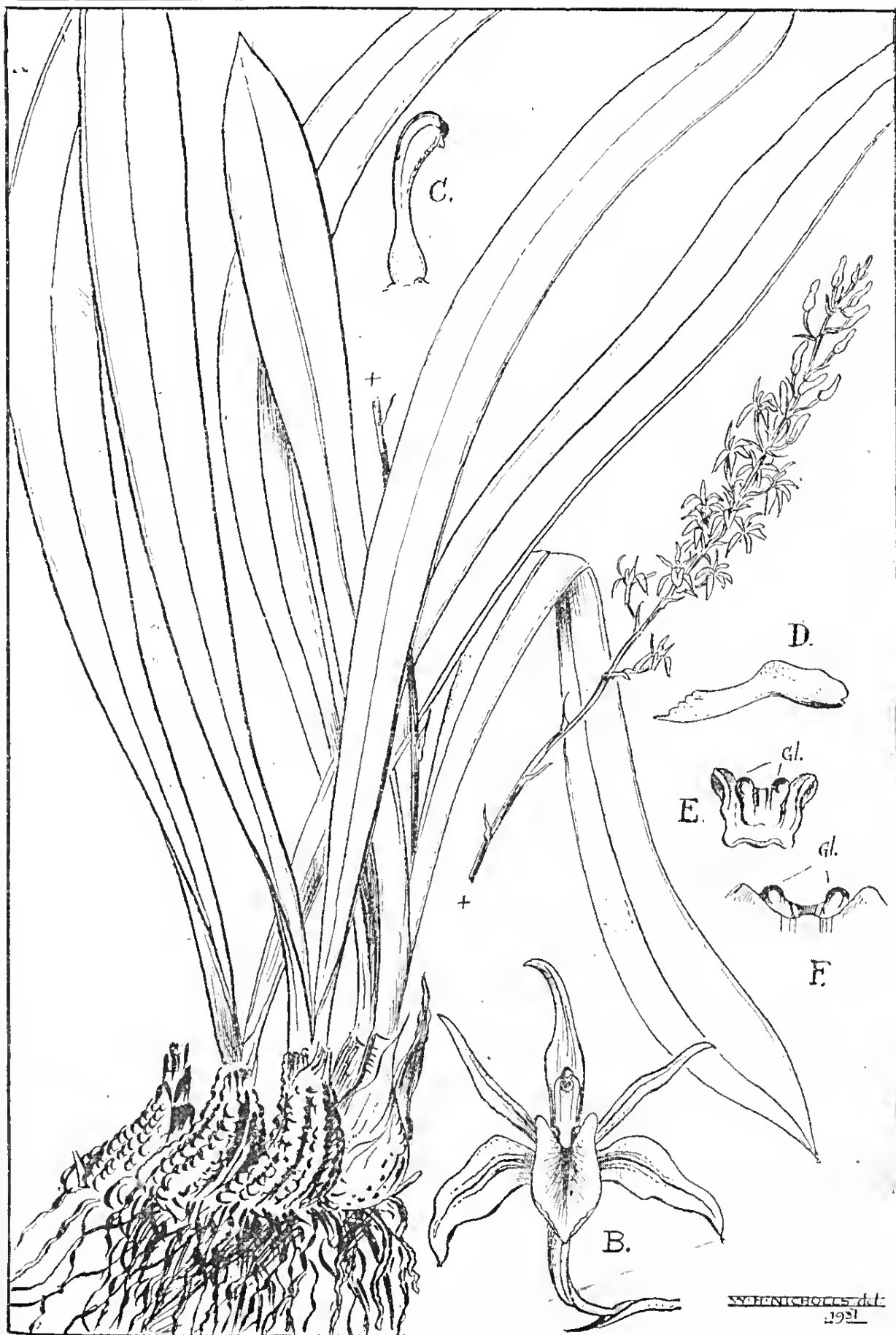
‡ Extr. from a letter from Dr. R. S. Rogers, 6/8/37.

MOSSES IN NORTH QUEENSLAND.

By H. N. DIXON, M.A., F.L.S.

The Bryology of North Queensland is of particular interest to botanists, in part because of what has been found, and in part because of what may be found. A number of endemic mosses have been found of quite peculiar interest, but of perhaps more importance are some that indicate the relationship of its flora with that of other regions, and so throw light on the origin of the Australian

flora. There is no doubt that this flora is related definitely to the subantarctic flora of New Zealand; this may be exemplified by the finding of *Dicnemoloma Sieberianum* at Raven-shoe (distribution, N.S.W., Tasmania, N.Z.); *Fissidens pallidus* H.F. et W., *Tortella calycina* Schwaegr. (extending to Chile), *Trachyloma planifolium*, Hook, *Acanthocladium extenuatum*, Brid. with a very similar dis-



LIPARIS FLECKERI.

Fig. A—Typical specimen.
 B—A Flower.
 C—Column from Side.
 D—Labellum from Side.

Fig. E—Glands on Labellum-Lamina
 from Rear.
 F—Glands on Labellum-Lamina
 as seen from Front.

tribution. These may be confidently assumed to have reached North Queensland by way of N.S.W. and Eastern Australian generally. On the other hand species like *Garckea phascoides*, Hook., *Leucobryum sanctum*, Brid., *Syrrhopodon croceus*, Mitt., *S. Muelleri* Doz. et Molk., *S. undulatus* Doz. et Molk., *Anomobryum cymbifolium*, Lindb., *Myurium rufescens*, Hornsch. et Reinw., *Meteorium Miquelianum*, C.M., *Barbella enervis*, Thw. et Mitt., *Taxithelium papillatum*, Harv., etc., all widely distributed in Indo-Malaya, and finding their most southerly Australian limit in North Queensland, are certainly invaders from the north.

Among the more interesting N. Queensland mosses have been a few from Mt. Bellenden Ker, showing a marked connection with the New Guinea moss flora. A more intensive collecting there, and on other high ground in the district would almost certainly give further data for the problems of geographical distribution.

Some recent collections by members of the N. Queensland Naturalists' Club, particularly those by Miss Elizabeth Henry from Millaa Millaa, S. Egan from Kuranda, and Dr. H. Flecker from Mt. Bellenden Ker and the Upper Mossman River area have had some quite interesting results. They include such endemic species as *Mulleriobryum*, *Rhizogonium brevifolium* Broth., *Garovaglia longicuspis*, Broth., etc., as well as a number of species new to Australia, some of special interest, as *Claopodium assurgens*, Sull. et Lesq., which here finds its most southerly limit of distribution, *Syrrhopodon Kindelii* Broth. et Par., only known from New Caledonia (unless *S. parvicaulis* C.M. from New Guinea be the same thing), etc.

Another interesting plant, *Macromitrium diaphanum* C.M., confined to Queensland and N.S.W., is one of the most peculiar species of this large genus. The specific name refers to the hyaline hair-point and its widened base, in itself an unusual feature in the genus. These greyish hairs give the plant a distinct resemblance to *Grimmia*, in the field. The colouring in the dry state is remarkable, the la-

mina of the leaf a strikingly glaucous green, the back of the nerve a rather bright yellow, and the hair-point grey or whitish. The specific name is rather unexpected, perhaps, in view of the fact that it has probably the most opaque leaf of any species of *Macromitrium*. The lamina is, in fact, 2-3-stratose in the upper part, a character which appears to have escaped notice hitherto, and the superficial cells, on each surface of the leaf, are tipped with strong, bifid papillae. It is this, no doubt, which causes the opacity of the leaf, as also its glaucous colour (when dry) by reflected light.

One of the most interesting plants collected is a new species of *Mesochaete*, a very peculiar, almost anomalous genus, hitherto considered to include two species only, and of a very limited distribution (Eastern Australia, Lord Howe I. and New Caledonia); it is also peculiar in structure. It is in fact so unrelated to any other genus that it is one of the very few genera that I have to look up in the index to find its place. It is, however, with little doubt, most nearly related to *Rhizogonium*. *M. undulata* is known from Queensland, and the new species resembles it closely in habit and in most structural points—it closely resembles a large species of *Fissidens* in general appearance, but with a stout, woody stem.—The main, and perhaps the only difference, so far as vegetative characters go,—it has not been found in fruit—lies in the cell structure. The cells in *M. undulata* are very small and dense, with very little variation, ranging from 8 to 13 microns in diameter. In the new species they are more than twice the dimensions, 20-25 microns across a highly marked character. In general, it appears to be a more robust plant, but I have specimens of *M. undulata* equally large.

I hope some time to publish a detailed account of these plants, but it is much to be desired that in the meantime further collections may be made, which will undoubtedly enrich the moss flora of Queensland and of Australia.

North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. VI.

CAIRNS, 1st JUNE, 1938.

No. 54

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns,
usually on second Monday in each month, at 8 p.m.

REPORTS OF MEETING:

14th March, 1938.

New Members Elected:

Mr. and Mrs. R. C. Watts, Townsville.
Miss Nancy Hopkins, Townsville.

Mr. E. McKeown, Tully.

11th April, 1938.

Address by Mr. F. P. Kelly: "Production of Ramie Fibre (*Boehmeria nivea*.)"

New Members Elected:

Mr. E. Evans, 122 Grafton Street, Cairns

Mr. S. H. Parlett, 58 McLeod Street, Cairns.

Mr. R. Underwood, Church Street, Gordonvale.

Mr. J. B. Holton, St. John's Rectory, Cairns.

Junior Member:

Mr. R. B. Williams, 370 Severin Street, Cairns.

12th May, 1938.

Address by Mr. A. Nicholson on "Tides."

New Members Elected:

Miss Costello.

Mr. S. W. Willats, Jaggan.

NOTES ON SOME NORTH QUEENSLAND UTRICULARIAS.

By Francis E. Lloyd, D.Sc., F.R.S.C., F.L.S., Carmel, California, U.S.A.,

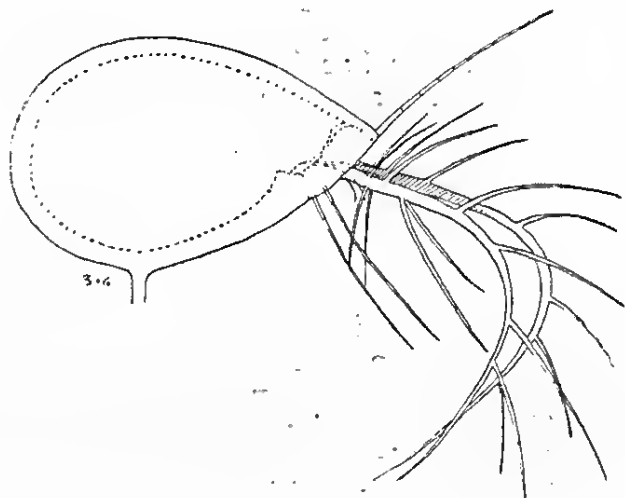
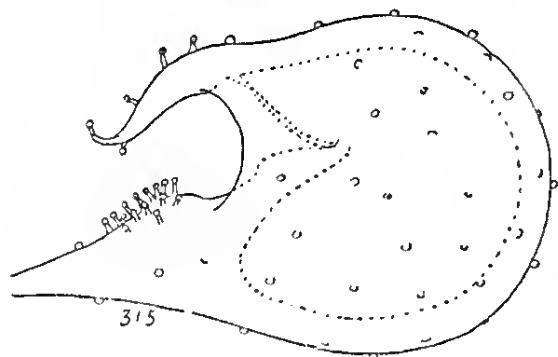
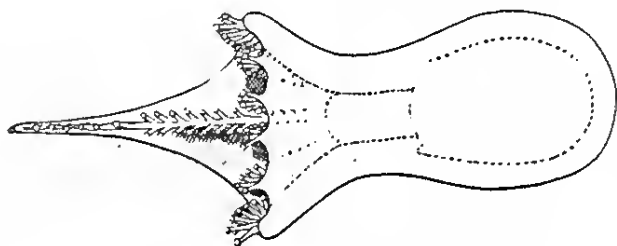
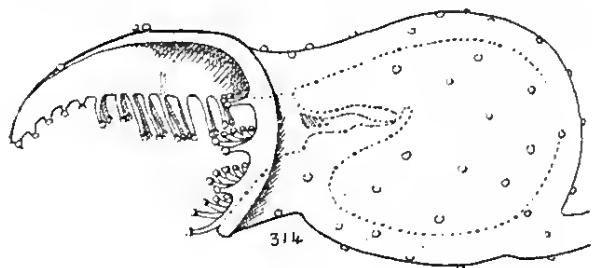
Through the generous help of your Honorary Secretary, I have been the recipient of specimens in spirit of three species of *Utricularia* which were found by Dr. H. Flecker in North Queensland. At his kind suggestion I send some notes on these plants, in the hope that interest in these interesting organisms will be stimulated. It is a curious fact that, in spite of the long history of this genus, our knowledge of the most important and interesting details about the various species, of which there are about 250, is singularly deficient. In addition to this, there are in Australia probably a number of still undiscovered species—rather certainly than probably—and this should serve as a stimulus to students of nature to look for them whenever opportunity offers. But here one may sound a warning, that collections should be made with very great care. If found in wet, swampy soil or mud, their underground parts should be very

carefully exhumed and the whole, flowers, fruits, and particularly the, as far as possible, undamaged underground parts should be preserved in spirit. In the case of the specimens before me, this has been done sufficiently so that I am able to give an account of the structures which at the moment particularly interest me, namely, the bladders or traps.

L.314. (your no. 3595) *Utricularia* aff. *nivea*. I am unable to be sure of the species as there were no flowers, but the affinity is certain. It is related to a group of Asiatic species in which the traps are very characteristic. The body of the trap is about 1 mm. long. It is constricted about the mouth, in front of which the wall expands to form a funnel with the entrance at the bottom. The upper part of this funnel is drawn out into a knife-blade shaped extension which bears along its inner edge two rows of glandular hairs. The rest of the funnel tube bears four pairs of rows of

similar hairs which converge toward the entrance. This arrangement serves as a guide toward the entrance, so that minute living forms may be led thereto.

The body of the plant is inconspicu-



3595. Growing in water sodden edge of Bessie's Creek, Trinity Bay. H. Flecker, 18/7/37.

3596. Ditto.

4053. Floating on water, with yellow flowers raised above surface. Edge of Station Creek, Chillagoe. H. Flecker, 15/11/37.

ous, the leaves being minute and spatulate, rising from the thread-like stolons which permeate the substratum. The inflorescence is relatively very tall, 15 c.m. more or less. The underground parts are so delicate that it is difficult to exhumate them. It grows in wet places.

L315 (your No. 3596). This plant again represents a group of species peculiar to Asia and Africa, chiefly if not entirely tropical. The specimen showing no flowers, the best that can be done is to indicate its affiliation, which is with a plant which has been called *U. caerulea*, possibly incorrectly. This is a taxonomic difficulty which has not been ironed out. However, I have described the trap of the supposed *U. caerulea* (Biol. Reviews 10:72, 1935) and it is this plant which may serve as the type. It grows in India and probably otherwise.

The trap is rounded (in lateral view) and there are two cow-horn like antennae projecting from above forward and sideways of the entrance. The stalk is approximated to the antennae, and has a slight hump on its upper side. This, and the antennae are armed with short stalked glandular hairs, which elsewhere over the surface are without stalks. This is altogether different from the trap of *U. nivea*, as will be seen from the figure herewith, but is very similar to that of the Australian *U. cyanea*, R. Br., which I found under the guidance of my colleagues in the University in Sydney, in that vicinity.

The leaves are similar to those of *U. nivea*, but somewhat broader, and the scapes have about the same habit and size.

L316 (your no. 4053) *U. exoleta*. This is undoubtedly the plant which passes under this name. It is a semi-floating plant, or even entirely floating. The many stolons make a floating mat of interlaced fibres bearing small leaves with a single forking near the base. The flower stalks arise from the axils of the leaves, and the bases send out a number of branch stolons which are of three kinds. One kind consists of descending stiff stolons armed with short branches with tightly curled leaves. These serve to anchor the inflorescence either in the

mass of floating fibres, or by penetrating the substratum if the water is not too deep. These are called the rhizoids, very well developed in your plant. Second, there are branches which bear much reduced leaves, but numerous traps. These also descend into loose mud if available. Most of the catch of prey is probably accomplished by these branches, merely because of the superior numbers of traps. The third kind of branch is the ordinary stolon which spreads abroad and can give rise to additional flower stalks, and bears simple once-forked leaves each with a trap on one of the segments.

The traps are pear-shaped viewed laterally, and have long slender branched antennae, with additional slender uniseriate hairs projecting away from the entrance from above and from the sides. This is the type of trap found in various species all over the world. My working type for this kind of trap is *U. minor*. The

Australian *U. pygmaea*, R. Br., is similar, but in this species I have found no rhizoids nor the exuberant development of other branches from the base of the inflorescence. This species is moreover generally much smaller, with short scapes which are one flowered.

The flower of *U. exoleta* is small (5 mm. long) yellow, gibbous with a prominent palate which is two lobed.

All the three above noted species have close affinities with Asiatic species, and like many plants in the tropical regions of Australia, betray origins in far removed centres. The peculiarly Australian, or better Australasian type, such as *U. dichotoma*, Labill, *capilliflora* and others, has a distinct form of trap found nowhere else than in Australia and New Zealand. To this lot belongs *U. tubulata*, F. v. M., which is the only floating but truly Australian form, and is found in your general region. It is hoped it will again be collected.

STRIPED MARSUPIAL CAT.

Although no specimen of such an animal has yet reached the hands of a zoologist, Le Souef and Burrell in their book on the Wild Animals of Australia give descriptions from quite a number of different observers of a

very little known marsupial, which they had provisionally named "striped marsupial cat." Owing to the above circumstance, the following description is certainly worthy of being added to the literature.

DESCRIPTION OF WILD ANIMAL SEEN ON ATHERTON TABLELAND.

By J. McGeehan.

About the year 1900, I was walking through the scrub accompanied by two dogs, on what is now the farm of Mr. Neil Neilson, Kairi. The particular spot on this holding with which this account deals is estimated to be approximately seven chains, in an easterly direction, from the present junction of the Kairi—Atherton and Kairi—Kulara roads.

The time, I believe, was about 4 p.m. My attention was attracted by fairly loud harsh grating and vibrating sounds from what was evidently a wild animal which the dogs were attacking.

The nearest approach to the sound described would be that of the call of an opossum, but harsher and more deeply intoned.

I hastened to the scene and there saw a strange creature on the ground about to expire and apparently killed by the dogs. It partly resembled a large domestic cat, excepting for the body, which was rather light in build.

The most striking part of its appearance was the well defined hoops of colour which encircled its body. These hoops or bands appeared to be about $2\frac{1}{2}$ inches in width, and the colours were white and dun alternating in perfectly marked circles.

As far as I can remember the alternate colours did not extend to the head, legs or tail. I think that the colour of these parts was dun.

The neck was short and stout, and the head was shaped more like that of a Pomernian terrier than of a cat,

but the pricked ears were not as large.

I noticed that, when the mouth was opened, the top and bottom jaws, at the front, contained long fine fangs, but regret that I cannot now recollect whether the number on each jaw was two or four. Whichever number it was the fangs were in sets of two and about a quarter of an inch apart.

I further regret that I do not remember the length or shape of the tail but think that this member was similar to that of a large domestic cat in all particulars. The eyes were dark in colour and vicious. The fur which covered the body was finer and shorter than that on a domestic cat.

Measurements:

After a good deal of consideration I would say that the following would probably be correct:—

From the point on the backbone immediately behind the shoulders to the butt of the tail, 14 inches. Length of front legs from the bottom of the paws to junction with the chest, 7½ inches. Height (from ground to back) 11½ inches to 12 inches.

I should have stated earlier that the length from behind the shoulders to

a point on the skull, between and level with the centre of the ears, would be about 5 inches.

I have no hesitation in stating that if the creature were standing upright the line of the trunk would be level; that is, the back portion would not be raised as would be that of a wallaby in that position.

I have occasionally seen a brownish black and white opossum, but the animal described was not one.

I did not arrive at any definite conclusion at the time as to what the age of the animal would be, but judging by its apparent good health and vigour it was not very old.

I took particular notice of the straightness of its front legs which indicated great speed in action.

I may mention that I have, at times, spoken of having seen this strange animal but the great majority seemed to doubt my word, and this discouraged me from writing an account of it earlier.

Last year, however, a person at Babininda informed me that he had seen similar specimens in the scrubs in that locality.

PHAEDYMA SHEPHERDI SHEPHERDI AND RAHINDA CONSIMILIS PEDIA.

By M. J. Manski, F.R.E.S.

Of the life histories of butterflies I have worked out, none have intrigued me more than those of *Rahinda* and *Phaedyra*.

Of the two, *Phaedyra shepherdii* is the most particular in the placing of the egg, as only on the extreme end of the entire leaf have I ever found the deeply-pitted greenish egg whilst the pearly-white egg of *Rahinda* is placed anywhere on the top or underside of the leaflet.

As the young emerge the first thought they have is for their own protection so they cut out small pieces of the leaf or leaflet, attach silk to them so that they hang down on each side of the midrib or leaflet stem. These portions wither and eventually dry brown, and it is along the stem or midrib that the young caterpillar hides and develops. For protective

colouration it is ingenious as the caterpillar is difficult to see among the dried pieces of leaf dangling around them.

To the collector who knows the food plants one glance at the tree tells him of the presence of the caterpillar, and when looking for the eggs of *Phaedyra shepherdii* only entire leaves need be examined. These plants are *Pongamia glabra*, *Ehretia acuminata*, and *Aphananthe philippinensis*.

As the caterpillars develop and are ready to pupate a reversal of habits takes place. Whereas *Rahinda* is not particular where the eggs are laid the caterpillar is very particular to pupate on the extreme end of the dead portion of the leaf that was its home. The colour being brown is very difficult to distinguish from portion of the dry leaflet. (To be continued)

North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. VI.

CAIRNS, 1st SEPTEMBER, 1938.

No. 55

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns,
usually on second Monday in each month, at 8 p.m.

BUSINESS FOR NEXT MEETING—MONDAY, 12th SEPTEMBER, 1938.

Sixth Annual General Meeting: Election of Officers: Annual Report, Etc.,
Annual Address: "Reasons for Need of Preservation of Native Flora and Fauna."

REPORTS OF MEETINGS:

13th June, 1938:

Address by Mr. L. W. Turner,
"History and Traditions of the Maoris."

New Members Elected:

W. J. McConaghie, Q.A.T.B., South Johnstone.

R. Murphy, c/o Cummins and Campbell, Cairns.

11th July, 1938:

Address by Mr. M. Auricchio on
"Spiders," illustrated by slides.

New Member Elected:

Mrs. Lang, 148 Abbott Street, Cairns.

8th August, 1938:

Address by Mr. D. P. Moynahan,
"Beche de Mer on the Great Barrier Reef."

New Members Elected:

Mr. and Mrs. Crust, 121 Grafton Street, Cairns.

Mrs. Monkman Dempster, Edge Hill.

Mr. J. W. Corbett, 79 Esplanade, Cairns.

PHAEDYMA SHEPHERDI SHEPHERDI AND RAHINDA CONSIMILIS PEDIA.—contd.

By M. J. Manski, F.R.E.S.

Phaedyma shepherdii being very particular to lay her egg on the extreme tip of the perfect leaf, the caterpillar does not worry much about where to pupate but leaves the hiding place amongst the dried portions of leaves and pupates underneath any leaf among the stems.

The caterpillars of both take a long time to grow and are very peculiar in shape. In fact, in outline a drawing of a Scottish terrier is the nearest approach to the shape of them.

The description of each of them is as hereunder:—

Phaedyma shepherdii:—Head: oblong, channelled in centre with two short, lateral spiny projections; pale brown in colour darkening to the sides.

Body: Two lateral spiny projections on second segment, two larger spiny projections on third segment curved inwards like the horns of a cow. Two more spiny projections on fifth seg-

ment and two shorter spiny projections on eleventh segment closer together than those of the second, third or fifth segments. Colour: Body dorsally brown and rough with a narrow chocolate band on each side extending from 3rd segment gradually extending upwards to meet at top of 11th segment, embracing the spiny projections. Below this chocolate line, darker brown extending to last segment, which is dark brown. On the 11th segment two yellow spots appear on each side and two larger yellow spots on the 12th segment. On 3rd and 5th and 11th segments a ridge appears which gives the caterpillar its peculiar appearance.

Pupa: Pale brown with very dark markings; hangs suspended by a cremaster; anterior end with two lateral points; wing cases laterally expanded.

Rahinda consimilis pedia:—Head: brown, roughened, no spines with two lateral short projections. Body: Olive green with very short hairs and min-

ute white dots; dorsally on 2nd segment two very short points, on 3rd segment a ridge with a brown point on either side connected by a white line, on 5th segment a much smaller ridge and points but without the white line, on 11th segment another ridge with backward directed points, a dark lateral line from 4th segment to 7th segment when it gradually becomes more dorsal to join the point of 11th segment, below this line generally darker brown.

Pupa: Brown with darker brown markings, on thorax two silver splashes, below each a silver spot, viewed dorsally these silver markings are hard to see, a dark medial dorsal ridge from thorax to posterior end; wingcases expanded laterally, anterior end almost straight.

The food plant is as yet undetermined.

The butterflies are beautifully illustrated and described in "What Butterfly is That?" by Dr. G. A. Waterhouse.

A NEW PTEROMALID FROM NORTH QUEENSLAND.

By A. A. GIRAULT, B.Sc.

The following new species of small Hymenoptera was given to me by an old collector in the North and a former associate and colleague of mine. It is represented by a single specimen. The group is the Chalcidoidea.

1. *Habrocytus garibaldia* sp. nov.

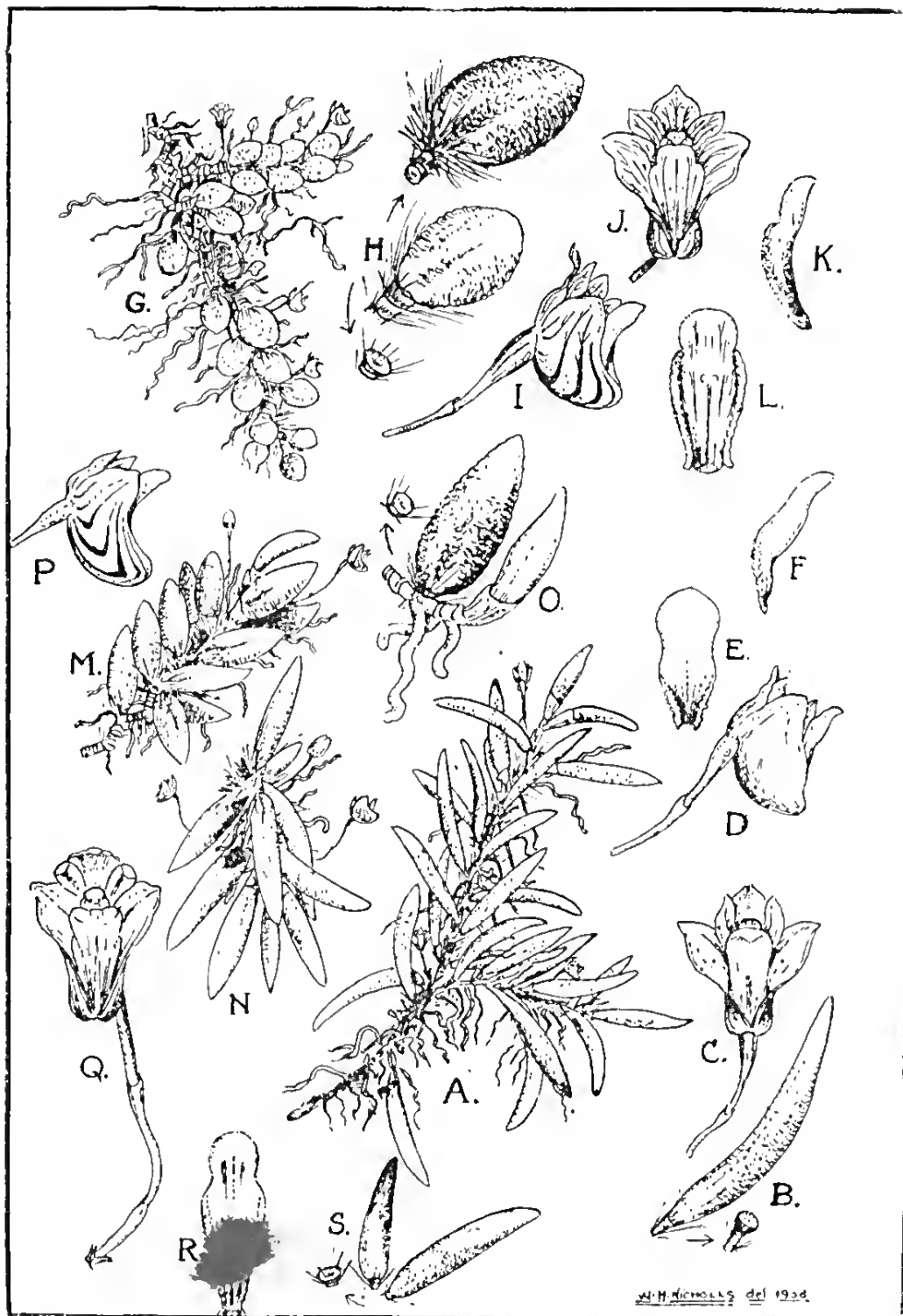
From *H. australiensis*: Legs pale except bases of the fore and hind coxae; a foveum representing the spiracular sulcus is more like a continuous, widening "gully" to apex; spiracle wider and shorter; the lateral carina embraces a foveum at its mesal base, is convex and curves meso-distad to the lateral apex of the short neck, then running mesad half-way to the meson, thence up and mesad to meet the median carina; the median carina therefore is longer. Flagellum black with the third funicle segment red-white, funicles nos. 1-4 twice longer than wide, somewhat exceeding the pedicel, no. 6 a bit longer than wide. Stigmal vein long, nearly straight, not two-thirds the length of

either of the two other equal ones. Discal ciliation extending proximad of the bend of the submarginal vein and embracing a somewhat diamond-shaped naked area, touching and opposite to the bend (and nearly across). The abdomen is a bit more slender and a bit longer, the segments after no. 3 not so transverse. Cross-suture of the scutellum less indicated. Venation of uniform colour, the submarginal bristles moderate in both species. Parapsidal furrows half-complete in both species but the spine beneath the axilla is shorter here.

A single female specimen, Gordonvale (formerly Nelson), September, 1920, A.P. Dodd.

The Australian species of this genus differ from Ashmead's diagnosis in having both margins of the pronotum acute and scutellum practically simple.

This species is a part of a systematic monograph of the Australian Chalcidoidea; its description is comparative.



KEY TO PLATE.

Small N. Qld. Epiphytes.

- Fig. A.—D. *Prenticei*, a typical plant.
 Fig. B.—A leaf enlarged, also leaf attachment.
 Fig. C.—A flower.
 Fig. D.—Flower from side.
 Fig. E.—Labellum from above.
 Fig. F.—Labellum from side.
 Fig. G.—D. *lichenastrum*, a typical plant.
 Fig. H.—Leaves, 2 forms enlarged; also showing leaf attachment.
 Fig. I.—A flower from side.
 Fig. J.—A flower from front.
 Fig. K.—Labellum from side.

- Fig. L.—Labellum from above.
 Figs. M, N—D. *dimorphum*, two plants, showing variable leaves.
 Fig. O.—A section of a plant enlarged, also showing leaf attachment.
 Fig. P.—A flower from side.
 Fig. Q.—A flower from front.
 Fig. R.—Labellum from above.
 Fig. S.—Leaves of slender form, also showing leaf attachment.
 NOTE.—Figures A, G, M, N, much smaller than natural size.
 For actual measurements see descriptions.

THREE DIMINUTIVE NORTH QUEENSLAND ORCHIDS.

(Including a New Species).

By W. H. NICHOLLS.

The present paper deals with three Australian epiphytes-diminutive Northern forms bearing very small and solitary flowers (of great beauty, nevertheless) on a slender filiform scape.

Two were described by Mueller. The other, of variable habit, has been illustrated under a wrong name; it is now to appear as a **sp. nov.**

Mueller described his two plants as **Bulbophyllum** species, but they—and the new species also—lack one very important characteristic of that genus, i.e., the more or less well-defined and persistent pseudo-bulb from which arises the usually solitary leaf, hence the name **Bulb-ò-phyllum**.

Concerning other generic characters assigned to *Bulbophyllum*, I shall say nothing other than that these additional features appear to be somewhat inconsistent.

Present-day Australian systematists have long been keenly interested in the proper classification of these puzzling forms—concerning which nothing has been published—as far as I can discover, since F. M. Bailey's time.

From dried herbarium material, these particular species seem almost intermediate between *Dendrobium*, Sw. and *Bulbophyllum*, Thou., and their presence has occasioned some uncertainty. Their very small size is apt to mislead, unless examined very closely.

Concerning *Bulbophyllum* Prenticei, Mueller writes: In reference to the leaf attachment "Joint below the very short, not forming a pseudo-bulb." It is difficult to assign this plant satisfactorily to either *Bulbophyllum* or *Dendrobium*. The general resemblance is to *Bulbophyllum*, but the "expected bulb" is absent, though the labellum in its lobeless condition justifies its somewhat traditional position, yet very little difference (generically) is apparent when comparison is made with the labella of the other two forms. (See Figures).

On the other hand, as a **Dendrobium**, the plant seems out of place; but after a careful study of the "foot

stalk" of all three plants—yet not without some little trepidation—I have decided to include this species as a **Dendrobium** also. If such a conclusion is not accepted finally, it will, at least, help to focus interest, thus contributing in some degree to the elucidation of a difficult problem.

A careful examination of Mueller's type material in the National Herbarium, Melbourne, and the fortunate possession of ample fresh material brought to flowering stage in a glass house in Melbourne, proves to my own satisfaction, that the three forms dealt with in this paper could be very conveniently included under Section **Rhizobium** (following Benth.) of **Dendrobium**, with but slight alteration.

When the tiny flowers of these diminutive plants have to be dissected and minutely examined, it invariably means eye-strain; but even the unaided eye shows that "irregular pseudo-bulb," and pseudo-bulb reduced to a scarcely prominent circular disk," hardly defined the true character of the leaf attachment of the plants which the Baron included under *Bulbophyllum*.

(The two genera are very closely associated. At one time, Mueller (and earlier botanists also) regarded a number of true *Bulbophyllum* as *Dendrobium*).

In the dried state (like strum and the new root so the leaf is practically sessile) (Prenticei) slightly petiolate (rudiment). in the dried state much the appearance of a shrubby pseudo-bulb, but it has, in the living plant, the same appearance.

This abbreviated stem is of similar character to that in the other two plants here dealt with and identical with leaf attachment in *D. linguiforme*, Sw., *D. cucumerinum*, Ldl., and *D. rigidum*, R. Br., species having somewhat the same appearance, but much larger. Thus the three plants here discussed—in my opinion—should be included under *Dendrobium*.

(To be continued)

19 JAN 1939

The

NATIONAL MUSEUM OF VICTORIA

North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. VII.

CAIRNS, 1st DECEMBER, 1938.

No. 56

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns,
usually on second Monday in each month, at 8 p.m.

BUSINESS FOR NEXT MEETING MONDAY, 12th DECEMBER, 1938.

REPORTS OF MEETINGS:

19th September, 1938.

Annual General Meeting. Electi. of Officers. Presidential Address by Dr. H. Flecker, entitled "Reasons and Need for Preservation of Native Flora and Fauna."

The following Office Bearers were elected:—

President: Dr. H. Flecker.

Vice-Presidents: Miss Hooper; Mr. J. G. Brooks, B.D.Sc., F.R.E.S.

Hon. Secretary: Mr. J. Wyer.

Hon. Treasurer: Mr. R. B. Williams.
Committee: In addition to above ex officio: Messrs. R. J. Gorton, J. Foster.

New Members Elected:

Mr. and Mrs. Izatt, Spence Street, Cairns.

Mrs. Runcie, 70 Abbott Street, Cairns.

10th October, 1938:

Address by Mr. S. H. Martin on the Australian Aboriginal.

THREE DIMINUTIVE NORTH QUEENSLAND ORCHIDS.

(Including a New Species)—Contd.

By W. H. NICHOLLS.

By inadvertence the name *D. dimorphum* appears on the Key to Plate instead of *D. variabile*, in No. 55.

(Supplemented Descriptions).

No. 1. *Dendrobium Prenticei* (F.v.M.) W.H.N. (*Bulbophyllum Prenticei*, F.v.M.). (1) (After Dr. Prentice).

Rhizomes creeping on the branches of trees, often branched, the sheathing bract at the leaf base soon breaking into threads. Leaf ellipsoid or narrow-cylindrical, 2-3.5 c.m. long, more or less curved, blunt; nerveless, faintly marked from foveolar dots. Flower solitary on very short pedicels, very small, about 5 mm. in diameter, dingy white, pink at the base only; lateral sepals oblique-deltoid only; lateral sepals extended into a semi-

ovate basal prolongation; dorsal sepal lanceolar; petals narrow-lanceolar; labellum as long as the lateral sepals, erect, lobeless, yellow with some red at the base, thick, oblong, cuneate at the base; the margins toward the base pubescent; tip broad and very blunt. Column short with two short teeth at the apex.

Figs. A to F.

Habitats: Bellenden Ker Range (Karsten); North Toohey Creek (Dr. H. Flecker); spm. no. 3322.

Note: The above species has a superficial resemblance to *Bulbophyllum crassulaefolium*, Cunn. (1839) (*B. Shepherdii*, F.v.M.).

No. 2.

Dendrobium lichenastrum (F.v.M.) W.H.N. (*Bulbophyllum lichenastrum*, F.v.M.) (2) (Lichen-like).

Rhizomes creeping, flexuose, often forming dense patches on the bark of trees or on rocks; the sheathing bracts soon breaking into long and abundant cilia. Leaves thick, about 1 cm. long, covered evenly with foveolar dots; from almost globular to ellipsoid, slightly channelled. Often more brown than green. Flower solitary, very small, about 5 mm. in diameter, on long pedicels, dingy white, densely lined with branching red veins on both surfaces; sepals broadly-ovate; spur curved, obtuse; petals lanceolar, much narrower, but little shorter than the sepals; labellum erect, orange-coloured, marked with red; thick, oblong; base wide; tip (or mid-lobe) rounded; the lateral lobes represented by rounded margins, which are pubescent downwards.

Column short, the wings small and blunt.

Figs. G to L.

Habitats: Sea View Range, Rockingham Bay (Dallachy); Ranges near Cairns (Bailey); "Rain forests on the very high country of Mt. Fox—on the Burdekin River—growing on *Flindersia Brayleyana*" (A. Glindeman); Specimen No. 3983, Clohesy River (H. R. Thurston).

No. 3. *Dendrobium variabile*, sp. nov. (variable in reference to the foliage). (Incorrectly appears in Key as *D. dimorphum*).

Planta parvissima, *Rhizoma breviter repens*. *Folium ovato—oblongum vel oblongum vel lanceolatum, crassum; apice obtusum. 1.3-1.7. cm. longum. Inflorescentia uniflora, parvissima, tri-colorata; basis comparate magna;*

calcar obtusum; sepalum dorsale late lanceolatum; lateralalia latiora; petala breviora angusta; labellum aureum angusti-oblongum obscure trilobatum; marginibus pubescentibus; lobus intermedius. Columna brevissima.

Rhizomes apparently short and dense on the bark of trees. Leaves thick, 1.3-1.7 cm. long, ovate-oblong, oblong to lanceolar, occasionally curved, blunt; marked with foveolar dots.

Flower solitary, very small, about 5 mm. in diameter on very long pedicels, white with prominent red striae; the lip orange, the red striae chiefly on the outside of the segments; dorsal sepal lanceolar; lateral sepals oblong-lanceolar, very wide at base; the spur comparatively large, blunt; petals small; labellum longer than the lateral sepals; thick, narrow-oblong, cuneate; base rather narrow; tip very broad and rounded; yellow marks with red; the lateral lobes represented by rounded margins, which are pubescent to the base. Column very short, the wings short and blunt.

(This plant is figured by R. D. Fitzgerald as *Bulbophyllum lichenastrum*, F.v.M. (3).

Figs. M to S.

Habitats: Campbell's Creek (Dr. H. Flecker); Mt. Fox (A. Glindeman).

- (1) Wings Southern Science Record 1, 173 (1881).
- (2) Fragm. VII., 60 (1869).
- (3) Anst. Orch., 11.

Acknowledgments.

I wish to acknowledge the courtesy of the National Herbarium Officers (Melb.), especially Mr. P. F. Morris, in the examination of Mueller's type material.

NOTE BY THE REV. H. M. R. RUPP.

Mr. Nicholls has kindly allowed me to read his paper on "Three Diminutive Orchids of N. Queensland," and to examine his illustrations, before sending them on for publication. I cannot feel sure that I have ever seen the plant which he identifies with F.v.M.'s *Bulbophyllum Prenticei*, but after inspecting his drawings I can

assert definitely that it is not the orchid in the Queensland National Herbarium labelled *B. Prenticei* (coll. by S. J. Kajewski). In my opinion, however, Mr. Nicholls has correctly depicted Mueller's species. In my own herbarium, alongside a specimen of Kajewski's *Bulbophyllum*, is a solitary flower very like that of Mr.

Nicholls, with the note: "Flower from Cairns, which appears to me much nearer Mueller's *Prenticei*." Kajewski's plant is undoubtedly a *Bulbophyllum* allied to, but differing from, *B. crassulaefolium* Cunn. I agree with Mr. Nicholls that the plant he depicts, which seems identical with Mueller's type specimens, should be placed in the genus *Dendrobium*. I

am also in accord with his treatment expressing this view in print. But Mr. Nicholls has dealt with these difficult little orchids more adequately than I could have hoped to do, and he is to be heartily congratulated on his achievement. It should now be less difficult to elucidate the proper position and nomenclature for the plant which I have above called Kajewski's *Bulbophyllum*.

CURIOUS INSECTS.

By J. G. BROOKS, B.D.Sc., F.R.E.S.

Fireflies.

Most people have noticed the phenomenon of small lights moving during the night. These, although called fireflies are not flies at all, they are small beetles of the Family *Lampyridae* and the common North Queensland varieties are usually no more than a quarter of an inch in length and less than an eighth of an inch broad. In colour they vary from tangerine to black and combinations of these colours. The striking feature of these insects when observed in captivity is the unusually large size of the eyes in comparison with the size of the body. The luminous patch, which is about one sixteenth of an inch square, is situated on the rear underside of the body.

Science has not revealed the cause of the light but it is believed to be due to the oxidation of fat in certain specialised cells. The light is a love call; the male by flashing his lamp attracts the attention of the female, who responds with a weaker flash.

The writer has observed fireflies on the Gillies Highway on a dark wet night in thousands, but the prettiest sight was obtained on a dark wet night in Eubenangee Swamp. A tree, the size of the back-yard lemon tree, was covered with them and one could easily imagine that one had been allowed to visit the fairies' New Year festival.

Insect Mimics.

Some insects of different orders by their bodily construction resemble members of other orders. This camouflage is for protective purposes. Wasps and bees (Order *Hymenoptera*) which are universally known to

be able to administer painful stings are the commonest types mimiced. One of the laws of nature is "Eat or be eaten," hence a harmless beetle with the appearance of a vicious wasp can instil fear into its enemies which often are much larger and stronger than itself, though this is not always the case as many parasites are minute in size.

Typical among these mimics are some varieties of beetles (Order *Coleoptera*) Family *Cerambycidae*. In appearance they resemble beautiful wasps (Order *Hymenoptera*) flying around blossoms on trees. If one looks closely at such a specimen one sees that there is only one pair of large transparent wings. The upper wings are short and meet in the mid line, which is typical of beetles.

Some flies (Order *Diptera*) by their bodily appearance resemble bees (Order *Hymenoptera*). Often when the uninitiated person removes bark from a log small dark insects resembling earwigs (Order *Dermaptera*) dart about—usually these are harmless beetles (Order *Coleoptera*) Family *Staphylinidae*.

Other insects though mimics do not mimic insects but mimic plant life. Such are stick and leaf insects (Order *Orthoptera*) and moths and butterflies (Order *Lepidoptera*) which are often mistaken for dead sticks and leaves. Some beetles grow coatings on their backs and are mistaken for the bark of trees or plant growth on the trunks of trees and logs. Such is nature!

Ants' Cows.

Many insects either in the larval or mature form secrete wax which, if allowed to remain on their bodies, causes

the death of the insects. Ants attend most of these insects and remove the wax for them. Amongst such types of insects is a family of bugs (Order Hemiptera). This is the Family Jassidae. It is a large family of leaf hoppers and is commonly called "Ants' Cows." To the casual observer it would appear that the ants which are attending them, have obtained easy food—such is the case but the ants are simply remov-

ing the waxy secretion and not devouring the insects themselves. In America the Jassidae are known as "sharp shooters" on account of the way they jump when disturbed. Most of the forms are small and inconspicuous, but on account of the immense number in which they occur, they do a great deal of damage to plant life, though the individual punctures which they make on leaves are often not noticeable.

HERMIT CRABS GO HOUSE HUNTING.

By BRUCE CUMMINGS.

(An account of these interesting creatures from the motion pictures by Mr. Cummings).

The August tide was receding rapidly and being the day before the new moon was an exceptionally low tide. As one wandered about, the reef became more and more exposed, forming crystal clear pools in which brightly-coloured fish darted in and out of the coral which abounded in the pools. All around, the numerous other creatures were on the move, food being the chief concern for most of them, but not the only reason for others. Carrying his house, the shell of a *Tonna* on his back, a hermit crab (*Dardanus megisthos*) was noted clambering over the broken coral and it was evident that it was by no means very comfortable, as it was perhaps more roomy than necessary. He suddenly came to rest as another member of the same species came to view from out of the coral a foot or so ahead of him. Watching each other for some time, the new arrival withdrew into its home, a cone shell, *Conus*. The other crawled alongside and thrust one of his claws into it, then both claws, but not being able to get a proper grip on his rival, he withdrew a few inches to consider the position. Having decided upon a plan of attack he again crawled over to the cone shell, destined to become his future palace and grasping it with his smaller nippers, with the larger one, he scooped sand into it, then taking hold of the shell with both chelae he rocked it backwards and forwards several times, the purpose being to distribute the sand within it so as to make its occupant uncomfortable. Evidently it did, for after the lapse of a couple of minutes, the outraged crab moved out a little, whereupon the assailant made another attack, and with chelae clenched tightly together, they struggled

and pulled with all their might, at the same time striking their shells together hard and often.

The wrestle had proceeded for about half an hour, when with a herculean effort, the occupant of the cone shell was lifted completely out and cast on the sand. The invader then took possession of the empty house which he seized with both claws so as to empty out all the sand, which accomplished, he turned the shell around with the opening facing him, at the same time bringing his own shell close up to it. After making sure by a surreptitious glance around him that all was secure, he evacuated his old residence and clambered into the new one tail first. With a quick jerk he pulled himself into his new home, after which his head and chelae were popped out so as to get a good glimpse of things and once more retreated into his shell.

The ejected crab, which had been resting near by, made an attempt to return to his old home, only to receive a nip on the soft unprotected portion of his tail. However, the usurper promptly turned out and chased him off the field. Looking very pleased with his new and more comfortable quarters, the victor moved the cone up and down on his back a few times, then wandering over the coral, his next important quest was something to eat.

Wandering on, one wondered what was to become of the homeless crab without any protection to his soft defenceless body until he could find another residence. Either he had to find a new uninhabited shell or he would in similar manner need to evict another crab from his home. Is this an instance of the survival of the fittest?



North Queensland Naturalist

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NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns,
usually on second Monday in each month, at 8 p.m.

BUSINESS FOR NEXT MEETING MONDAY, 13th MARCH, 1939.

REPORTS OF MEETINGS:

12th December, 1938.

Demonstration of Handling of Live
Snakes by Mr. R. de Heaume.

13th February, 1939.

Lecture entitled "Sugar," illus-

trated by drawings, by Mr. F. A.
Lamont.

New Members Elected:

Mr. R. de Heaume, 126 Abbott
Street, Cairns.

Mr. S. G. Barnes, Abbott Street,
Cairns.

THE PINK UNDER WING MOTH.

Phyllodes meyricki (Olliff).

Family Noctuidae, Sub-family Catocalinae.

By R. L. HUNTER, Cairns.

One of the many large and beautiful moths in North Queensland, *Phyllodes meyricki* is perhaps the least known, as it very rarely leaves the dense rain forests in which its food plant grows, this being a low-growing trailing plant.

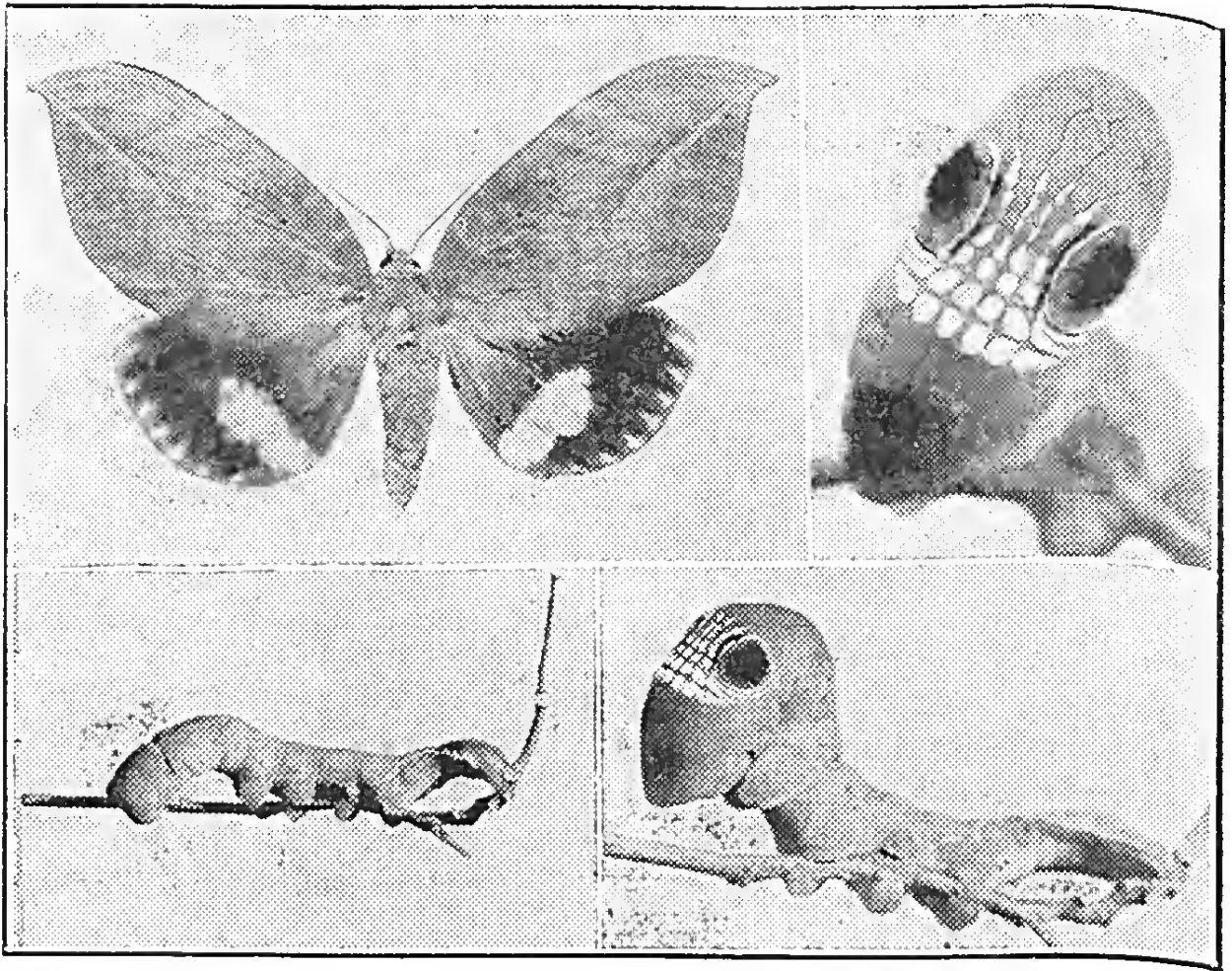
The larvae are semi-loopers and in the early stages are generally of some brownish colour. As the larvae become fully grown, instead of adopting some form of protective coloration, they become conspicuous, especially if irritated, when the markings give it a very fearsome appearance. The fully grown caterpillar is about five inches long and to see it resting on a stem, one would never guess the latent fantastic design and coloration which is concealed. If the larva is irritated, it jerks its head underneath its body, half raises itself from the stem upon which it is resting and presents an amazing sight. A transverse crease on the dorsal aspect of the caterpillar

hitherto scarcely noticeable now opens out fully to reveal huge blue black eye spots encircled with white and beneath these a double row of tooth-like markings thus transforming this apparently harmless larva into a terrifying object which doubtless helps to preserve it from its many enemies, such as birds, wasps, etc. When not alarmed, these extraordinary markings are folded in a transverse crease and are thus concealed from view.

The pupa is enclosed in a silken web, around which the larva wraps a few leaves. It is nearly two inches in length and is very beautiful, being of a dull bronze colour and encircled by metallic brass coloured bands, which retain their beauty even after the moth emerges.

The fully grown moth has a wing expanse of between six and seven inches.

Appearance: The upper wings have a special pattern of a greyish brown



Photographs by H. V. Chargois, Cairns.

PHYLLODES MEYRICKI (Olliff.)

Moth and Caterpillar.

Note in lower left-hand figure, transverse crease towards head end in which terrifying features are concealed.

colour with a peculiar white marking near the centre.

The lower wings are of a very deep grey with seven white spots around the outside edge and a large patch of bright pink extending nearly through the wing.

Underside: Upper wings are of a greyish colour with much darker

The plant on which the caterpillar

centres and three white spots in the middle. The lower wings are of much the same colour as the upper wings, but the pink patch is much smaller, whilst the white spots are absent.

The moth has a very strong gimlet-like haustellum which enables it to pierce the stems of fruit over a quarter of an inch in thickness.

feeds has been determined as *Pycnarrhena australiana*, F.v.M. (Family Menispermaceae).

BOOK REVIEWS.

13. **AUSTRALIAN PARROTS**, by Neville W. Cayley, F.R.Z.S., Ex-Pres. Roy. Zool. Soc. of N.S.W., Ex. Pres. Roy. Australas. Ornith. Union, Vice-Pres. and Hon. Life Member Gould League of Bird Lovers of N.S.W.; 332 pp., 11 coloured plates, 19 other illust. Published by Angus and Robertson Ltd. The author, like his father of the same name, Neville Cayley, is famous as a particularly fine

bird painter, but he has also been a very keen student of birds and their ways. The coloured illustrations make the identification of the different parrots unmistakable, and as the book is written for the information of any who care to read it, whether naturalist or not, it is full of interest, and may surely claim to be the paramount authority on most matters concerning the Order Psittaci. The names,

vernacular—those given in "What Bird is That?" by the same author, with slight variations—and systematic as well as references, descriptions, history and geographical distribution with maps, habits and nests are given with much detail. The special aviaries for parrots provided by the Zoological Society of South Australia, in Adelaide, are illustrated, and a host of other information is available to any who care to peruse the book. The author is to be heartily congratulated upon the appearance of such a monumental work.

14. **TITANS OF THE REEF**, by Norman Caldwell, 248 pp. 25 full page photographic plates. Published by Angus and Robertson Ltd. Price 8/5.

The author is a professional shark catcher and describes lucidly and in a very interesting manner in good literary style, his experiences and encounters with such large monsters as the crocodile, various sharks, gropers, etc. He evidently does not claim much knowledge of natural history and refers to the eel as a reptile, and the groper as a teleost. The large wasps building on his fishing gear are described as hornets. The single biological name is that of **Nebrodes concolor**, which the author describes as a shark which showers a stream of water over its unwary captor. As a thriller, the book certainly serves its purpose, especially to fishermen, who are not at all interested in natural history.

NOTES ON THE TERRESTRIAL FAUNA OF LINDEMAN ISLAND, WHITSUNDAY PASSAGE.

By

MELBOURNE WARD, F.R.Z.S., F.Z.S., Honorary Zoologist Australian Museum, Honorary Collector Queensland Museum.

Lindeman is a mountainous island, approximately five square miles in size. The highest peak is Mount Oldfield rising seven hundred and fifty feet above sea level. The nearest point of the mainland, Cape Conway, lies eight miles across the southern end of the Whitsunday Passage.

The terrain of Lindeman varies from steep slopes of loose stones and boulders on the northern side to fairly flat plateau on the south-west. All the southern slopes are rocky and covered with spear grass, **Heteropogon**. The knolls are capped with out-cropping rocks.

The vegetation forms four major ecological zones; the rain forest on the northern slopes; the Savannah land where poplar gums, **Eucalyptus platyphylla** are dominant and takes up the greater part of the plateau; tea tree, **Melaleuca Leucadendron**, park also on the plateau where swamp conditions are developed during the rainy season; open grass land on part of the plateau and the south slopes. Where rocks occur on the hillside, the **Pandanus** is found.

The headlands are clothed with hoop pines, **Araucaria Cunninghamii**, which add a touch of character to distant views of the island.

Each of the ecological zones mentioned supports a distinct fauna of reptiles, spiders and a few birds, such as the brush fowl, **Megapodius reinwardti**, in the rain forest and the quail in the grass on the plateau and southern slopes.

The notes which follow are grouped under separate headings for different groups of the animal kingdom.

Because of the fact that I was specialising in the study of the marine life of the region, my bush notes are unavoidably fragmentary. However, I have been tempted to record the observations in view of the little that has been written on the natural history of the island.

My wife and I resided on the island from December, 1933, to September, 1935.

Mammalia.

The only native animals on the island are a few koalas, **Phascolarctus cinereus**, which have been liberated from time to time, but during our stay on the island we saw no trace of them. Camps of flying foxes were often found in the rain forests and they paid devastating visits to the mango trees at the homestead. Insectivorous bats flitted about in the

gloaming, but I never succeeded in finding their hiding places. During a previous visit in 1928, I did find a small cave where the Little Bat, *Vespadelus pumilus*, was found clinging to the ceiling. Only one small family was then collected and subsequently, I was unable to find any more.

Aves.

Apart from the gulls, terns, sea eagles and hawks, the bird life was not rich. The common species was the Pied Currawong, *Strepera graculina*.

However, kookaburras, *Dacelo gigas*, pheasant-coucal, *Centropus phasianinus*, stone-plover, *Burhinus magnirostris*, were also numerous throughout the year.

Brush fowl mounds were quite common in the rain forests, and we saw the courting behaviour several times. Flocks of white cockatoo, *Kakathia galerita*, haunted the Savannah land on calm sunny days, but the shelter of the rain forest was sought during hard blows from the south-east, and several nests with young were found in hollows of Poplar Gums. It was interesting to observe the increasing number of small quail which came each year to breed on the grassy slopes. Colourful parakeets visited the Savannah lands and moonlit evenings were made weird by the haunting call of the Frog Mouth, *Podargus*.

Reptilia.

Altogether, there appear to be seventeen species of lizards, ranging in size from a ground goana down to legless lizards.

The Goana, *Varanus gouldi* (Varanidae), visited the beaches and excavated the turtle nests. Each goana seemed to have a special hiding place, generally a burrow under a partially buried rock, an escape aperture was generally hidden some distance away from the main entrance, and several times I had the mortifying experience of running the goana to earth in its lair and partially excavating its burrow, only to hear the rustle and crash of undergrowth as my quarry escaped through the cleverly concealed emergency exit.

Another favourite trick performed by the goana is to lie perfectly still if he thinks he has not been observed.

Next in size is the Blue-Tongued Lizard, *Tiliqua scincoides* (Scincidae), but it is of quite rare occurrence; only three individuals being seen. Another large skink, *Egernia major*, inhabited the rain forests and out-croppings of rock on the knolls. These lizards, measuring about eighteen inches in length, are copper brown above; their backs beautifully iridescent in the sunshine. We found them ideal vivarium subjects, readily tamed and intelligent, displaying a strong partiality for paw-paw and banana.

In the rain forest we found a beautiful little skink, *Lygosoma (Hinulia) tenue*, with dark brown body, blue throat and chin, armpits rusty red and yellow belly; the females of this species were more dully coloured. Both sexes were observed creeping about amongst the moss-covered stones, pouncing upon unwary insects. Their manner of progression was by short dashes interspersed with careful examinations of their immediate surroundings, accompanied by violent jerking of the head as though signalling. Numbers of this species were also kept in the vivarium where they readily accepted termites as food.

Other small skinks were confined to the slopes and the Savannah land and all were kept in the vivarium at one time or another, and all showed great adaptability, feeding well on small insects.

Two small species of Geckos were found, the Tree Gecko, *Gehyra variega*, and the Rock Gecko, *Heteronota bynoei*. The former frequented dead trees and specimens were collected by removing dead bark or splitting up the hollow trees. The Rock Gecko, on the other hand, preferred the under surfaces of stones or prone logs and some were taken under masses of coral lying close to the high tide mark.

A very interesting little lizard occurred on the rocky shores and on the mangrove trees, and used to make its way on to the inter-tidal region at low tide. Unfortunately, I did not collect specimens for study purposes.

Perhaps the rarest of the small lizards was one we called the Red Tail, *Ablepharus heteropus* (Scincidae); the few specimens that were taken came from a small area of steeply sloping hillside at the western end of the island.

(To be Continued)

29 JUNE 1939
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NORTH QUEENSLAND NATURALISTS' CLUB

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usually on second Monday in each month, at 8 p.m.

BUSINESS FOR NEXT MEETING MONDAY, 12th JUNE, 1939.

Lecture by Mr. L. LEEMING SCHOFIELD, "Legumes and their Value to the Human Race."

REPORTS OF MEETINGS:

13th March, 1939.

Demonstration by Mr. G. J. Brooks,
on the Mounting and Setting of Insects.

17th April, 1939.

Cinematograph Film of "Meshie, a
Chimpanzee, reared for most of its life
with American children."

9th May, 1939.

Owing to the unavoidable absence of
Mr. Schofield, the Lecture has been
postponed until the next regular meeting.

New Member Elected:

Mr. S. J. Shepperson, Boonjie.

NOTES ON THE TERRESTRIAL FAUNA OF LINDEMAN ISLAND, WHITSUNDAY PASSAGE.

By

MELBOURNE WARD, F.R.Z.S., F.Z.S., Honorary Zoologist Australian
Museum, Honorary Collector Queensland Museum.

(Continued from last issue).

Of four species of snakes found,
none were numerous. The commonest
was the Moon Light Snake, *Liasis
childreni* (Boidae); next the Fat-
Headed Snake, *Boiga irregularis* (Co-
lubridae); then the Green Tree Snake,
Dendrophis punctatus (Colubridae);
and lastly a small collared snake known
from the island by only two specimens.
All except the last species were kept
in captivity, and their feeding habits
observed.

The Moon Light Snake, as its name
implies, was found at night, and was
active during the rainy season; they
were readily caught by torch light,
and I found them easy to handle.
Large specimens were about three
feet long and marked like a carpet
snake, the colours, however, being of
much darker shades of brown.

A NEW GENUS AND SPECIES OF AUSTRALIAN
PTEROMALIDAE.

By A. A. GIRAULT.

The short marginal vein, reminding one of the common *Pachyneuron* and the low antennal insertion, are the characteristics of this genus. But it bears other characters as well. For instance, I have rarely seen a member of the group which bore that peculiar character so common in the Eucharitidae, namely what is called a "mouth-plate." It occurs here, nevertheless, and is almost unique for the family or sub-family. It is rare in the great majority of the groups of the Chalcidoidea, but is invariably present in the Eucharitidae. Without further pause, I name the genus and species.

FAMILY PTEROMALIDAE.

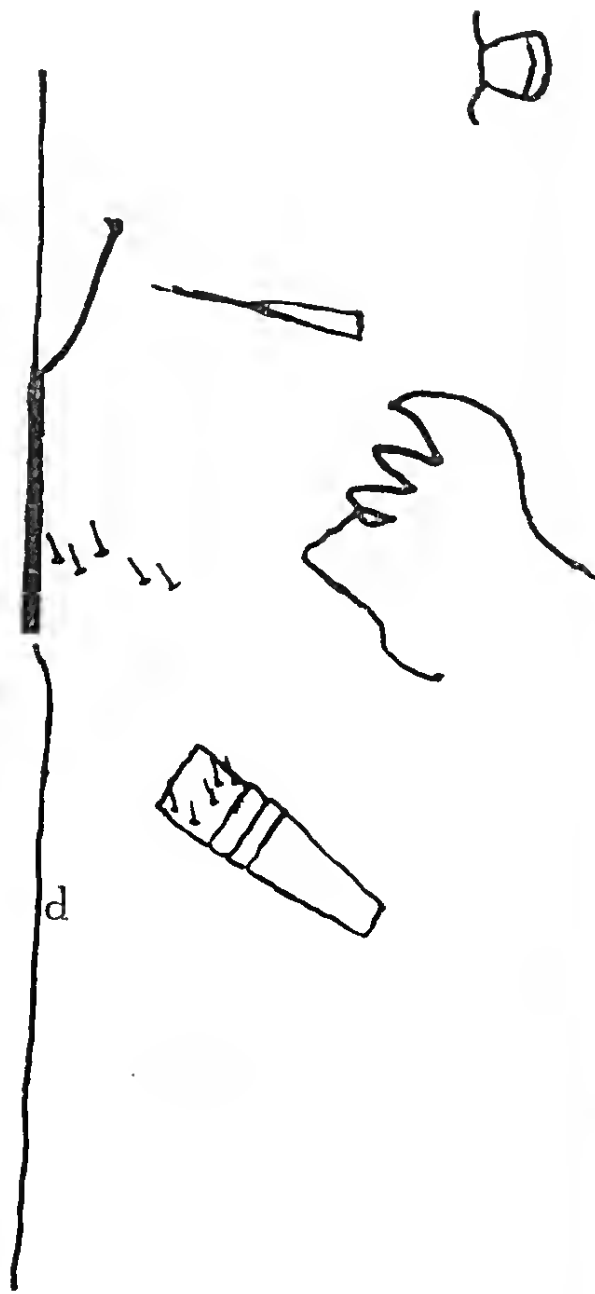
Genus *Inkaka* nov.

The genus runs, in my modernised synopsis, to the genus *Trigonogastrella*, but the marginal vein is shorter, distinctly shorter than usual for the genera of the Pteromalidae; the antennae are inserted lower down on the face and are clavate; the scutellum bears a distinct cross-suture near apex; there is the mouth-plate; the petiole is a half longer than wide; and the second segment of the abdomen is a third of the surface excluding the petiole, and is the longest segment.

1. *Inkaka 4-dentata* nov. Genotype. Aeneus, the veins of the wing fuscous, the palpi white; antennae black, the scape brown; legs fuscous aeneus, the hind tibiae darker at basal third (except at the knee), the tarsi yellow, so is the petiole. Pedicel exceeding the first funicle joint, the latter slightly longer than wide; sixth funicle segment twice wider than long. Marginal vein comparatively short, shorter than the post-marginal vein, the submarginal vein interrupted at apex as in some Spalangiae. Propodeum tricarinate, the neck forming about half the part, the spiracle of the propodeum small and round; median carina of the propodeum short, crossed by a cross-carina which joins long lateral carinae.

A detailed description of this genus and species is given in the manuscript of my systematic Monograph of the Australian Chalcidoidea now in the Queens-

land Museum at Brisbane. The species and genus were taken at Melbourne, Victoria, by Mr. B. Blackbourn. The generic name is aboriginal.



Out-line drawings are given, with the accompanying description. But I am not an artist. However, I have attempted to show the veins of the wings, the proximal ending of the discal ciliation, a mandible, the scutellum, axilla and cross-suture, one of the digits of the mouth-plate and the first funicle joint, ring-joints and the pedicel.

GEOLOGIC AERIAL PHOTOGRAPHS.

By L. C. BALL, B.E., A.M.I.E.A., Chief Government Geologist, Brisbane.

The invitation to me to contribute a note on some topic of North Queensland geology is appreciated, and I gladly embrace the opportunity to bring to the notice of the North Queensland Naturalists' Club a recent discovery of my own (See Queensland Government Mining Journal, October, 1938, p. 340, and November, 1938, p. 381).

This consisted in the detection of important geological features such as stratigraphic grain, faults and joints in aerial photographs of jungle-covered country as revealed by vegetal alignments. It is no new thing to the botanist that forest types are distinguishable in aerial photographs, more especially those taken from low altitudes, nor to the geologist that particular rocks have special plant associations which greatly facilitate the field differentiation of, say, granite and basalt or sandstone and shale country. Except in alluviated areas, the growth of vegetation is based primarily upon the petrological composition of the underlying rock as the source of mineral plant foods; but variable resistance to weathering may affect the availability of those foods.

Under prevalent climatic irregularities shallow underground water storage is a prime factor in the persistence of a particular floral species. We know that for underground storage open spaces are requisite. Limestone caverns are among the largest, being sometimes many yards in diameter and chains long; but they are of local occurrence, and need not be considered here. The next in order of cubic capacity are open rock fault fissures which may extend laterally for miles and vertically for hundreds of feet and usually are characterised by appreciable crustal dislocation, but excessive crushing of the wallrocks involving a detrital seal may inhibit storage. Crustal fissures are prevalent in all our more ancient rocks and are to be expected in the terrain back of our drowned coast. Joints are minor cracks disposed systematically and more or less prevalent in all rock masses as a result of dynamic stresses. The larger master joints may extend for many yards or even chains and near the surface may gape to form

reservoirs several inches wide. Unconsolidated sandy and gravelly sediments characteristic of valley bottoms are ideal water carriers and important where widespread and thick, but these do not concern us at the present. Porous rock strata however, whether horizontal, inclined or vertically disposed, cannot be ignored because they usually serve as aquifers, and consequently may directly affect surface vegetal growth along their outcrops.

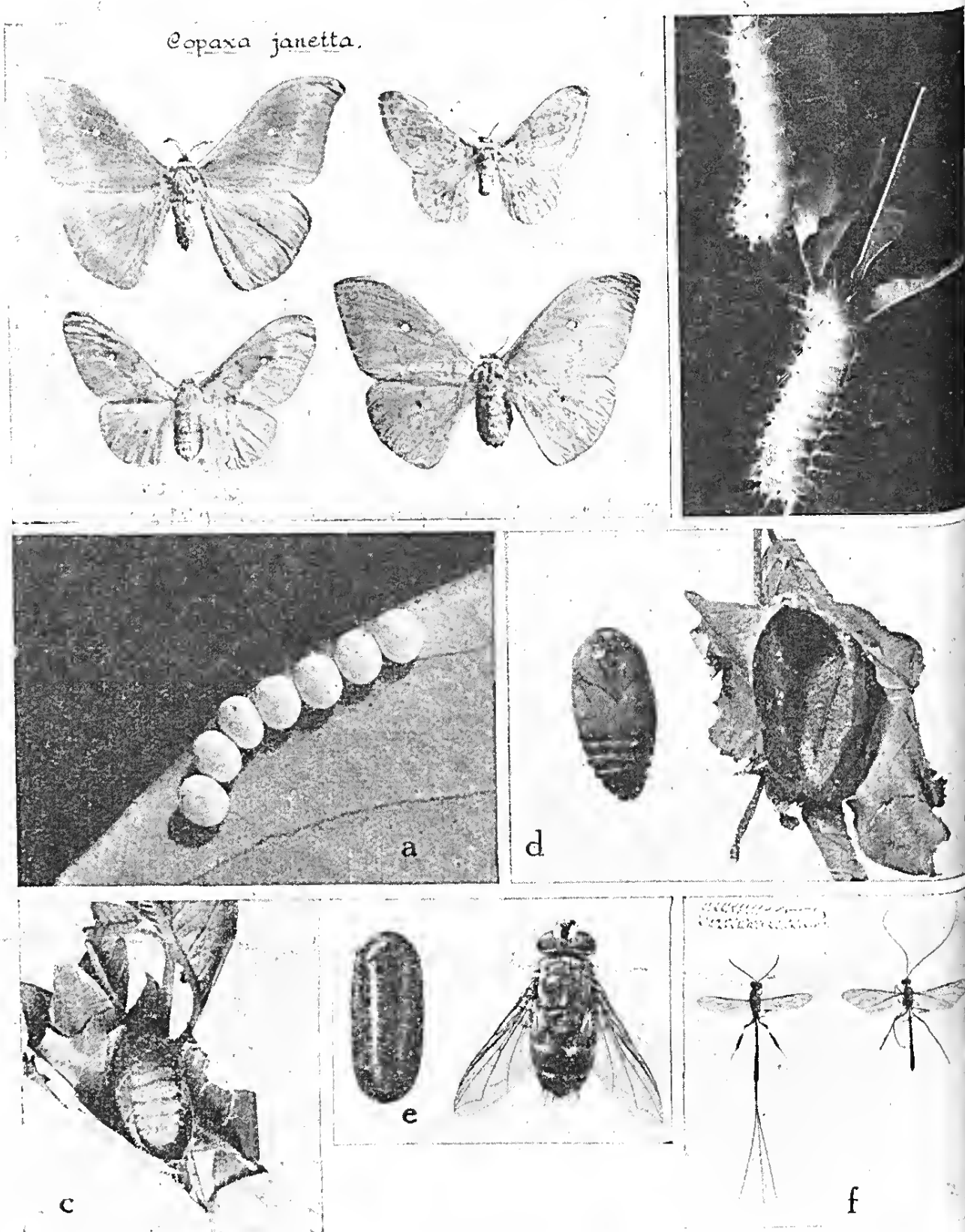
The very fine set of Adastra aerial photographs of the Freshwater area loaned me by the Cairns City Council, comprises contact prints taken at regular intervals on aligned courses, and suitable for use stereoscopically. By that means, purely physiographic contours may be identified and deleted; and it is only then that the rain-forest or jungle is seen to be crisscrossed by extremely fine lines. These when plotted fall into three typical groups: (1) unbroken, persistent and few in number, (2) generally parallel but discontinuous and extremely numerous, and (3) broken, discontinuous and irregularly disposed. The first may be correlated with fault traces, the second with the stratigraphic grain (that is the pattern produced by the outcrops of the tilted sedimentary strata), and the third with induced joint systems.

With your chairman, Dr. H. Flecker, and Mr. F. T. Morris, the city engineer, I paid a single visit to the Freshwater Inlet last year, and on that occasion, observed mineralisation by arsenopyrite where one of the master joints crosses the foot pad beyond the car park. I have suggested therefore that these contact prints would be very helpful to the prospector in these jungle-clad mountains, both for the purpose of topographic fixation and for the selection of more likely spots for ore deposition, e.g., fault intersections and/or stratigraphic folds.

The cross-hatching observable in dense timber may be of nearly as much interest to the botanist and forester as to the geologist and prospector; and I venture to express the opinion that the photographs offer a wide field of research to the members of the North Queensland Naturalists' Club.

LIFE STORY OF COPAXA JANETTA

Also Two of its Parasites.



Photographs by H. V. Chargois, Cairns.

(a) Eggs, (b) Larvae, (c) Pupa, half-formed, (d) Fully pupated, (e) *Winthomia australis* (f) Braconidae.

The

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VICTORIA.

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BUSINESS FOR NEXT MEETING, MONDAY, 11th SEPTEMBER, 1939:—

Annual General Meeting.

Presidential Address: "The Herbarium."

12th June, 1939:

Lecture by Mr. Leeming Schofield,
"Culture and Production of Rubber
in Malaya."

New Member Elected:

Mr. Charlton, 142 Spence Street,
Cairns.

10th July, 1939:

New Member Elected:

Mr. K. Karey, Townsville.

21st August, 1939:

New Members Elected:

Rev. Mr. Johnson, Lockhart River
Mission.

Mr. J. Zimmermann, Bungalow.

Address by Mr. Gordon Rutherford,
"Aerial Survey in Relation to Ground
Survey."

DENDROBIUM LINGUIFORME, Swartz.

(Variety NUGENTII Bailey and the Typical Form).

By W. H. NICHOLLS.

The typical form of this well-known *Dendrobium* grows commonly on rocks in exposed positions, also on trees in open forest country—often forming large mats.

It is not necessary to describe this species for it is well known to orchid lovers, but for convenience, it is figured here alongside F. M. Bailey's variety *Nugentii*—a much modified form, which is apparently very rare.

As may be seen from the accompanying figures, the leaves of this variety are broader and thicker, with a more rugged covering than in the typical form, and the deep longitudinal furrows, so characteristic a feature of this species is, in the variety *Nugentii*, more pronounced

by the addition of numerous transverse channels.

In the racemes we find, perhaps, the most striking dissimilarity, the flowers have shorter segments—thus are smaller, also neater in the raceme; and undoubtedly possess more character and charm than the spider-like blooms of the other.

Bailey describes his variety in "The Flora of Queensland" (1902)* as follows, "This species differs considerably in the form and size of its tongue-like thick leaves, but until I received Mr. Nugent's specimens I had not observed any marked variation in the flowers. These, however, at first sight, strike one as being distinct, and differ from the more commonly known plant in the fol-



KEY TO PLATE:
DENDROBIUM LINGUIFORME,
Sw.

A Leaves and flowers of typical form. B. Leaves and flowers of variety
NUGENTII, Bail. (approximately natural size).

lowing particulars: Smaller flowers, shorter pedicels, sepals scarcely exceeding 4 lines in length; white,‡ except sometimes a tinge of yellow near the pouch. Petals longer than the sepals. Labellum not half the length of the other segments, the lateral lobes being of a lilac colour," etc.

"Habitat: Eungella Range (L. J. Nugent)"

The author's material—a small plant—was received in September, 1937, from Dr. H. Flecker, of Cairns, North Queensland. It was collected by H. R.

Thurston (1-IX-1937) in the Ravenshoe district.

It was growing on the bark of a dead tree.

This plant readily responded to cultivation in the writer's heated glasshouse in Melbourne, producing in September, 1938, a healthy raceme of fragrant bloom.

*Vol. V., page 1533.

‡The typical form commonly bears white flowers also.

THE EUPLOEAS (RHOPLACERA) OF THE CAIRNS DISTRICT.

By M. J. MANSKI, F.R.E.S.

The **Euploeas** are slow-flying butterflies and never appear to be in a hurry. Of the five in this district much has yet to be learned, and, until recently, only the life-history of **E. corinna corinna** was known and recorded. This particular butterfly is the most common of all the **Euploeas** and may be seen on the wing all the year round. Its eggs are laid on the leaves and young shoots of the Oleander (**Nerium Oleander**), Figs (**Ficus Muelleri** and **F. eugenioides**), also milky creepers such as **Marsdenia** and **Mandevillea**. The larvae when full grown are reddish-brown with several black bands margined with white on each segment and a lateral, longitudinal band. There are four pairs of fleshy tentacles, three pairs on the thoracic segments and one pair on the posterior segments. The pupa is variable, some are like burnished silver, whilst others are golden with brown bands and stripes or dark brown markings. The pupa is suspended by a cremaster to the underside of the leaf.

The description of butterfly is:—

Male: upperside; forewing, brown with an outer marginal row of small white spots and an inner marginal row of large white spots, that in area 3 being larger than the others, a silky sex mark in

area 1a below the cell; hindwing, brown with an outer marginal row of large white spots. Underside, paler than upperside, with similar white spots and others towards the centre of the wings.

Female. Similar to the male; without sex marks and usually one or two white spots near end of cell on the upperside of the forewing.

Euploea eichorni, commonly called Eichorn's crow is a close associate of **E. corinna corinna** and feeds on the same food-plants and the caterpillars are easily confounded with them. On closer examination however, the caterpillars are different and although the colours are the same, the longitudinal band differs. This, perhaps, is the only difference as there are no distinguishing factors in the pupa.

Butterfly: Male; upperside; forewing, glossy black with a marginal row of small white spots and an inner row of large white spots. Upperside, brown, white spots as on the upperside, with additional white spots near the centre of both wings.

Female: Upperside, similar to the male, a small white spot on costa above the end of cell of forewing and dorsum of

forewing straight. Underside similar to the male.

Euploea sylvester sylvester is commonly called Sylvester's crow, has been known to lay its eggs on *Ficus eugenioides*. The life-history of the butterfly has not been satisfactorily worked out, but from what has been made out, the caterpillar has been mistaken for *E. corinna* and it was not until the butterfly emerged from the pupa (also apparently identical with *E. corinna*) that it was realised to be *E. sylvester* and the opportunity of closer scrutiny was lost.

The butterfly is: Male: upper-side; forewing, brown-black with two or three white spots near costa above end of cell, a variable series of white spots, two long dull black sex marks below cell; hindwing, brown-black, a series of white marginal spots and an inner series of elongate white spots. Underside, brown, markings as above with additional spots near the centre of wings.

Female: similar to the male; without sex marks and dorsum of forewing straight.

Although not actually proved, I am of the opinion that *E. corinna*, *E. eichorni*, *E. sylvester* inter-breed with one another as their habits are the same, food plants, as far as known, are the same, the adults are on the wing together in the same locality, and I have even obtained caterpillars which I suspected were *E. sylvester*, owing to marked differences, but they always emerged *E. corinna* or *E. eichorni*.

The other two: *E. tulliolus tulliolus* and *E. hyems niveata* are quite distinct from the three previously mentioned, in so far, as the caterpillars are concerned, as they have only three pairs of fleshy tentacles, and some entomologists have placed them in the genus *Callioploea* as distinct from other *Euploea*s and when the life histories have been finally worked out, in all probability their place will be with *Callioploea*.

The life history of *E. tulliolus tulliolus* is as follows: Egg: white, deeply

pitted, twice as long as wide, laid on young shoots of food plant, *Malaisia tortuosa*; young larva, head black, body pale green with two short dorsal projections on 2nd and 4th segments and two short projections on 11th segment. Full-grown larva, head, black with white markings, body, black with yellow bands and a lateral, longitudinal band. A series of white spots between each set of four bands. On some, the spots merge into one another.

Pupa: Silver with yellow suffusion and a greenish suffusion on back.

Butterfly: Male, upperside, dark brown with a series of large white marginal spots on the forewing which is without a sex mark; dorsum of forewing strongly bowed covering a pale sex mark on the upperside of the hindwing. Underside, brown with an outer marginal row of small white spots and an inner row of larger spots. Female: similar to the male, but with dorsum to forewing straight and without sex mark on hindwing.

This butterfly is variable.

Euploea hyems niveata.—As far as the life history is concerned, here again the butterflies are found on the wing together, have the same food plant, extremely difficult to distinguish the caterpillars, except that the larvae of *E. tulliolus* is, perhaps, darker than *E. hyems niveata* and much more elongated. This is noticeable when caterpillars are placed together, but not otherwise.

Butterfly. Male: upperside, dark brown; forewing with a marginal row of white spots and without a sex mark; hindwing, with a very broad marginal band and pale sex marks hidden by the bowed dorsum of forewing. Underside, brown, similar to upperside, but with additional spots.

Female: similar to male; without sex marks on hind-wing.

Here again, I am of the opinion that the two latter butterflies interbreed with one another, but only a careful scrutiny of their habits and the breeding of a series of life-histories of each species will solve this problem. This is my ambition this coming season.

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The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. VIII.

CAIRNS, 1st DECEMBER, 1939.

No. 60

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns,
usually on second Monday in each month, at 8 p.m.

BUSINESS FOR NEXT MEETING, MONDAY 11th DECEMBER, 1939:—

Address by Mr. Noel M. Ferguson, "Man's Use of Natural Deposits."

11th September, 1939:

Annual General Meeting.

New Member Elected:

Mr. F. Zimmerman, Bungalow.

Election of Officers.

Presidential Address: "Collection, Treatment and Arrangement of Herbarium Specimens."

9th October, 1939:

Illustrated Lecture by Mr. Ian Grabowsky on Hagen Valley.

13th November, 1939:

Paper by Mr. W. R. Holloway on "Palms."

SARCOCHILUS OLIVACEUS, Lindley

An interesting variety from North Queensland

By W. H. NICHOLLS.

S. olivaceus, Ldl., var. *borealis* n. var.

The following description is taken from a plant received from Dr. H. Flecker, of Cairns, North Queensland, on June 1, 1939. When received, this plant had two racemes of buds in healthy condition, flowers were fully expanded towards the end of July and lasted in good condition over August. The specimen was collected by Mrs. B. Sparvell, at Millaa Millaa, 2nd May, 1939.

Planta similis formae typicae, Flores flavo-virides, fuseo-rubri, Labellum album, conspicue maculis fuseo-rubris.

Plant similar in all respects to the typical form, which is abundant in the bush-forests (jungles) of Southern Queensland, and in New South Wales, "Southward to Mt. Dromedary."

Racemes two, exceeding the leaves. Flowers 2 c.m. diameter, in a loose raceme, six to each; sepals and petals green, a darker hue than in the typical form, suffused with yellow towards the centre, and markedly blotched towards the base with deep red-brown—these blotches much more intense on the reverse side. Sepals rather wider than in typical flowers; the dorsal sepal similar in shape to that present in *S. dilatatus*, F.v.M.—"dilated into a rhomb." Petals only half as wide as sepals. Labellum, with a white ground and generously blotched and otherwise marked with dark red brown flowers very fragrant.

The whole appearance of the plant of this new variety is strongly suggestive of *S. dilatatus*, and it may have been—by some—confounded with that

species. In fact, Bentham's remarks, and the fact that he considered *S. dilatatus* synonymous with *S. olivaceus* supports this view. He writes—in regard to specimens of *S. dilatatus* from Sydney and from Brisbane, "does not appear to me to differ from *S. olivaceus*." *

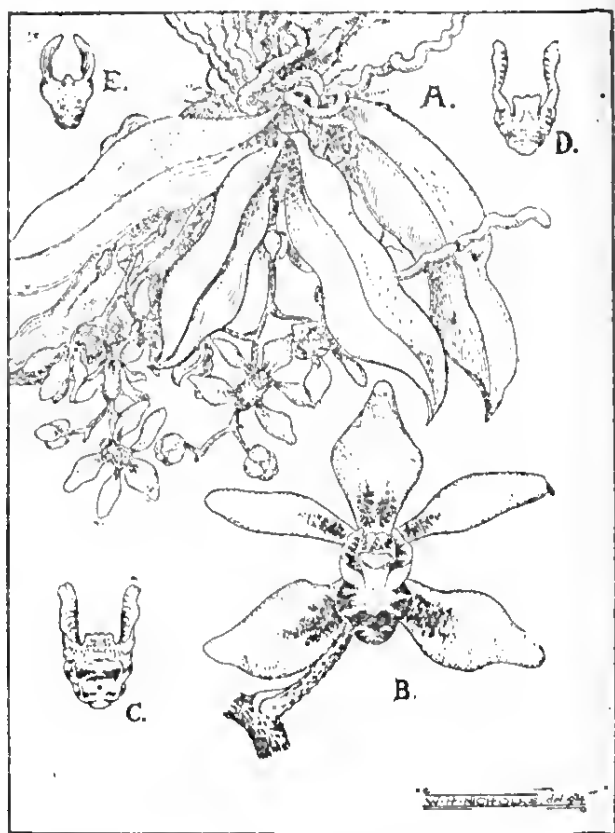
In the dried state this new form might very easily be mistaken for *S. dilatatus*. In fact the present writer thought Mrs. Sparvell's specimen to be that species when first the flowers opened out—this in spite of the differences in the structure of the lip. The somewhat "heavy colour scheme"—almost wholly green (a distinct green) and the heavy brown blotchings were responsible for the deception.

From a brief distance both species appear to be identical even to a careful observer.

The typical *S. olivaceus* could hardly be mistaken for *S. dilatatus* for the characteristic "old gold" flowers of the former are unmistakable—in fact may be regarded as "unique" among Australian species of *Sarcochilus*. Habitat: Millaa Millaa, North Queensland (spec. No. 6025). Collected by Mrs. B. Sparvell, 2-5-1939.

The varietal name is in allusion to its Northern habitat.

*Flora Australiensis VI., 294.



S. olivaceus, Ldl., variety *borcalis*, n. var.

Figures (A) Mrs. Sparvell's plant; (B) A flower greatly enlarged; (C) Labellum of typical *S. olivaceus* from front (Tambourine North, Sth. Queensland); (D) Labellum of *S. olivaceus* from front (N.S.W.); (E) Labellum from front, of *S. dilatatus* (Boonah, South Queensland).

DIPODIUM STENOCHEILUM Schwartz

By The Rev. H. M. R. RUPP.

A dried specimen of a terrestrial orchid received from Herberton in 1938 was forwarded to me by Dr. Flecker. A somewhat hurried inspection gave me the impression that it was a form of *Dipodium punctatum*, but it was put away for further examination. Recently I have subjected the specimen to a critical investigation. It appears to me to differ considerably from any species hitherto described in Australian publications, nor does it agree with any Malayan form. Inquiries at the National Herbarium in Sydney revealed that a Darwin plant had been named *D. stenocheilum* by Schwartz many years ago, and that it was described in Feddes Repert. XXIV, 1936. The Government Botanist of Victoria kindly furnished me with a copy of this

description, partly in Latin and partly in German. The German portion was translated for me by Mr. E. Nubling, of Sydney. Three localities are given: Port Darwin, Koolpinyah, and Budge Creek. Bentham (Fl. Austr. vi.p. 301) includes Schwartz's Darwin plant in *D. punctatum*. I have no doubt at all that the Herberton plant is identical, and I am of the opinion that it is specifically distinct from *D. punctatum*. But it is difficult to form a reliable judgment on this point from a solitary dry specimen. Further material, either fresh or dry, is very desirable. Mr. W. H. Nicholls, of Melbourne, informs me that a Queensland clergyman, whose name he does not give, has recorded the species *D. stenocheilum* and has promised specimens. For the pre-

sent I consider it wise to leave the matter of specific rank an open question, until further material is available. In my specimen, the main points of difference from *D. punctatum* are: Long narrow labellum with a gibbous base and the sides of the mid-lobe prominently deflexed; long column; perianth segments narrow but **obtuse at the apex**; stem flattened, basal bracts few and short. The flower is not spotted, but forms of *D. punctatum* with unspotted flowers have been found. Colour dull-purplish.

As far as I am aware, no description of this tropical Australian orchid has hitherto appeared in any Australian publication. A specimen, apparently of a *Dipodium*, collected over 60 miles from Cairns, was sent to me in 1938 by Dr. H. Flecker. Unaware of any other species in Australia except *D. punctatum* R.Br., *D. Hamiltonianum* (Bail.) Cheel, and *D. ensifolium* F.v.M., I supposed this specimen to be rather an unusual form of the first-named; but I was unable at the time to make a critical examination. Upon doing so more recently, I discovered several features exhibiting marked distinction from any form of *D. punctatum* known to me. Inquiries at the National Herbarium in Sydney revealed that a species had been described under the name *D. stenocheilum* in Feddes Repert. sp. nov. XXIV 4-13, Dec., 1927. By the kind courtesy of the Government Botanist at the Melbourne National Herbarium, I received a copy of the description, in Latin and German. I have not found it easy to arrive at the exact import of one portion of the Latin: and Mr. E. Nubling, who kindly translated the German for me, found a somewhat similar difficulty there. But I have no doubt at all that Dr. Flecker's specimen is *D. stenocheilum*. Though it is a "new" species, described as lately as 1927, the

plant itself is actually alluded to by Benthiam in Fl. Austr. VI. p. 301, where he includes in *D. punctatum* specimens collected by Schultz at Port Darwin. Schwartz says that "Bleeser's material," from which presumably he made his description, tallies perfectly with that long before collected by Schultz. He considers the plant decidedly distinct from *D. punctatum*, and I venture to think that few will disagree. He adds that the differences "consist first in narrower and **OBTUSE** perigon-tips, a narrower lip which at the base is distinctly sac-shaped, with hairy margins extending right to the base; and absence of dotting: otherwise also in a slenderer habit, in smaller flowers, slenderer and relatively larger gynostemium with broader calyptoid end; and is also perhaps distinguished by a greater height of the plant. The species stands definitely nearer *D. squamatum* of New Caledonia, and also clearly shows the scales (squamae) concentrated at the stem-base: these, however, are of quite a different form, for which reason a specific separation is here also necessary."

It must be remarked that the absence of spots on the flowers is not an adequate point of distinction from *D. punctatum*, since unspotted forms of the latter are quite well-known. And it appears to me that the alleged smallness of the flowers is only relative to the height of the plant; actually I have seen much smaller flowers on many plants of *D. punctatum*. Nor can I see much force in the remarks about basal scales: whatever may be the case with *D. squamatum*, in *D. punctatum* these are very variable, and sometimes agree pretty closely with those of the new species. Nevertheless, there remains a residue of important distinctions which seem to me to justify the elevation of this interesting *Dipodium* to specific rank.

FITZGERALD'S "AUSTRALIAN ORCHIDS"

By The Rev. H. M. R. RUPP, Sydney.

Since it was at my request that recently the Chief Botanist of the N.S.W. National Herbarium, Mr. R. H. Anderson, sent to Dr. H. Flecker five lithographs of unpublished plates by

the late R. D. Fitzgerald, and since I understand that Dr. Flecker wishes these to become the property of the North Queensland Naturalists' Club, I thought that it might interest mem-

bers if I contributed a brief article on the man whose name is so honoured in orchidological circles all over the world, by reason of his magnificent contribution to Orchid literature and art.

Robert David Fitzgerald was born at Tralee, in Ireland, in 1830, the son of a prominent banker. From his early years he was a lover of nature: ornithology was his first hobby, and he became no mean authority on the subject. In 1856 the family emigrated to Australia, and settled at Balmain, then quite a fashionable suburb of the growing town of Sydney. Young Robert in that year joined the Lands Department of N.S.W. Ornithology still had attractions for him; so too had geology: he was also a very keen fisherman. After his marriage he settled down on the Parramatta River side of Hunter's Hill. His work up country brought him into contact with our wonderful Australian flora, and at last he was led to concentrate his spare energies on our Orchids. He was a man of most versatile accomplishments. It is not given to many men to be at the same time a capable surveyor, civil engineer, geologist, botanist, and artist; yet R. D. Fitzgerald was all these. In 1873 he was appointed Deputy-Surveyor General of N.S.W. To him we owe the preservation for the public of some of the most beautiful forest reserves in N.S.W., particularly in the Blue Mountains.

It was in 1882 that the Government began the publication, on a somewhat lavish scale, of Fitzgerald's great work on "Australian Orchids." After his retirement from the Public Service in 1887, the next five years of his life were largely devoted to the carrying out of this enterprise. With matchless skill he depicted each species, life-size, in colour; and added, on a magnified scale, the essential details of every important part of the flower. Alas, he was not destined to complete his undertaking. In August, 1892, he died, leaving a great part unfinished. Some of the plates which were then ready were subsequently published under the collaboration of Messrs. Henry Deane and A. J. Stopps, the latter of whom had been Fitzgerald's lithographer. But there is a residue which has never

been published. Most of these plates were happily secured a few years ago by the trustees of the Mitchell Library in Sydney. The recent bringing to light of five unpublished plates at the National Herbarium is of no little interest: because only one of these is identical with any plate in the collection secured by the Mitchell Library.

The largest, and perhaps the most important, is an uncoloured drawing of a *Cymbidium* obviously allied to *C. suave* but distinct from it. The narrow, almost terete seed-capsules indicate that this can be no other than Fitzgerald's "mysterious" species *C. gomphocarpum*, about which we have all been in the dark for years. He described this very briefly, giving no clue to locality, in "Journal of Botany," XXI, p. 203, and that is all we have known. No one now living, as far as I know, has ever recorded it. The discovery of this plate, however, at least shows us what the plant is like, and it is to be hoped that all orchid-lovers will keep a good lookout for it.

Of the four other plates, one—a colour-plate of *Diuris palustris* and *D. brevissima*, is in the Mitchell collection alluded to. Fitzgerald, being human, made mistakes occasionally; and there can be no doubt that he has incorrectly depicted *D. palustris*, a little species well-known in the Southern States. The plant to which he gives the name appears to be a form of *D. maculata*. *D. brevissima* is presumably one of his own species, but it has never been described and is not known. The locality is Woodford, N.S.W.

The remaining plates are: (1) *Diuris carinata* (W.A.), and two forms of *D. lonifolia* (southern States and W.A.). This is a beautiful colour-plate, as is (2) *Prasophyllum Frenchii* and *P. Fitzgeraldii*. The former is a highland species of southern Australia (the latter is a South Australian plant. (3) is uncoloured. It depicts *Microtis alba* (W.A.), and *M. atrata* (Southern States).

I should have liked to explain something of Fitzgerald's methods of work, and how it comes about that some of the plates, even among those in circulation, are not coloured. But this article is already longer than it was intended to be.

19 MAR 1940

The North Queensland Naturalist

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NORTH QUEENSLAND NATURALISTS' CLUB

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usually on second Monday in each month, at 8 p.m.

BUSINESS FOR NEXT MEETING, MONDAY, 11th MARCH, 1940:—

Lecture by Mr. W. White, of Cairns, on "Our Tropical Fish as Observed
in Aquarium," illustrated by Aquarium Specimens.

11th December, 1939:

Lecture by Mr. Noel M. Ferguson, F.I.O.Q., "Man's Uses of Natural Deposits."

New Member Elected:

Mr. Sydney J. Ward, Monamona Mission.

14th February, 1940:

Lecture by Mr. F. Aland on "Fish."

New Member Elected:

Mr. Gilbert P. Whitley, F.R.Z.S.,
Ichthyologist to Australian Museum,
Sydney.

DRYOPIDAE IN NORTH QUEENSLAND.

By J. G. BROOKS, B.D.Se., L.D.Q., F.R.E.S., Cairns.

Dryopidae are small dull-coloured aquatic or semi-aquatic beetles found on rocks or logs in fast running streams. They are collected by taking the rocks and logs from the streams and allowing the water to dry off. Shortly, small beetles will be noticed moving and are easily collected by means of a small brush dipped in alcohol.

Until H. J. Carter, B.A., F.R.E.S.,

and E. H. Zeek re-classified this family, few specimens were known in Australia. In 1929, Mr. Wassel, who had been with H. J. Carter in New South Wales, led the first organised collecting party to the Pine River, South Queensland. Mr. H. Haeker, F.R.E.S. (Queensland Museum), Mr. F. A. Perkins, B.Sc.Agr. (Queensland University), and the writer saw and collected their first specimens of



this little-known family. On this trip, some of us wore swimming togs and dived to different depths for logs, but the writer has since found that the shallower and fast running creeks produce far better results than the deep and more slowly running streams.

It is the opinion of the writer that the reason for the distribution is that small fish can easily contend with a slowly running stream and both the beetles and their larvae prove easily obtainable food for the fish, whereas in the fast running portions of creeks, the fish cannot compete with the current, so the beetles are undisturbed.

In North Queensland, the writer has obtained more species and greater numbers of *Dryopidae* on the Atherton Tableland, (particularly at Ravenshoe and Millaa Millaa) than on the coast. No specimens have yet been secured from the Mossman River, Barron River (Cairns), Fishery Creek, Babinda Creek or Russell River. Freshwater Creek and Little Mulgrave River both produced a species new to science (*Simsonia brooksi*, Cart. et Zeck). All the Tableland rivers and creeks which have been examined have produced results. These include Barron River and Emerald Creek

(Mareeba), Millstream River, Vine, Dinner and Massey Creeks (Ravenshoe) and branches of the Beattie River (Millaa Millaa). To date, one new species (*Notriolus tropicus*, Cart. et Zeck) has been discovered on the Tablelands by the writer, and *Stetholus elongatus*, Cart. et Zeck has its first Queensland recording from the Ravenshoe district.

The following is a list of North Queensland *Dryopidae* collected by the writer and determined by H. J. Carter, B.A., F.R.E.S.

Hydrethus leai, Cart.

Stenelmis pallidipes, Cart.

Kingolus cupreus, Cart.

Kingolus metallicus, King.

Simsonia brooksi, Cart. et Zeck.

Simsonia purpurea, Cart.

Notriolus subplanatus, Cart. et Zeck.

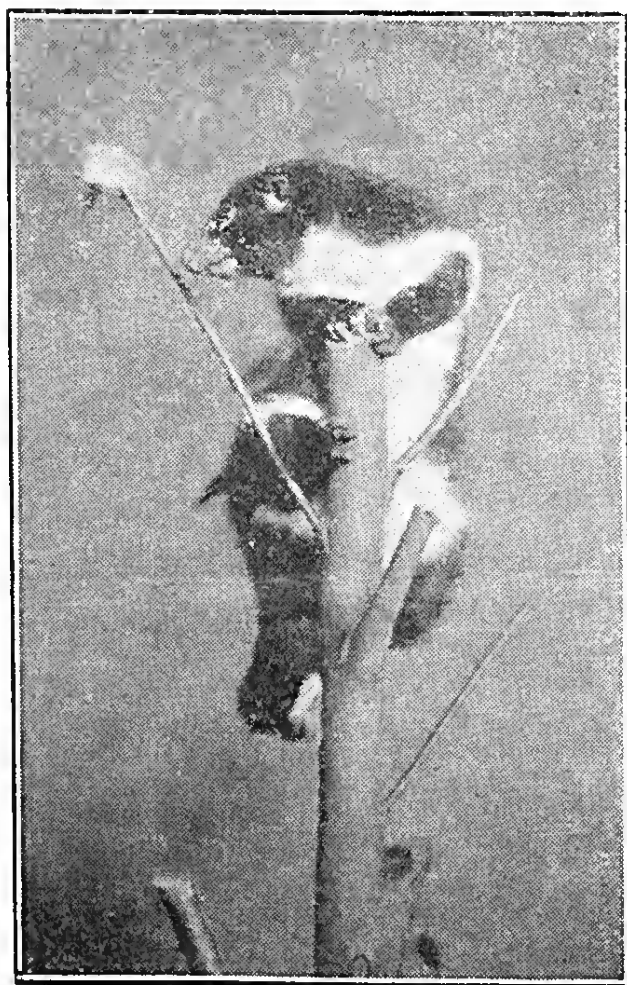
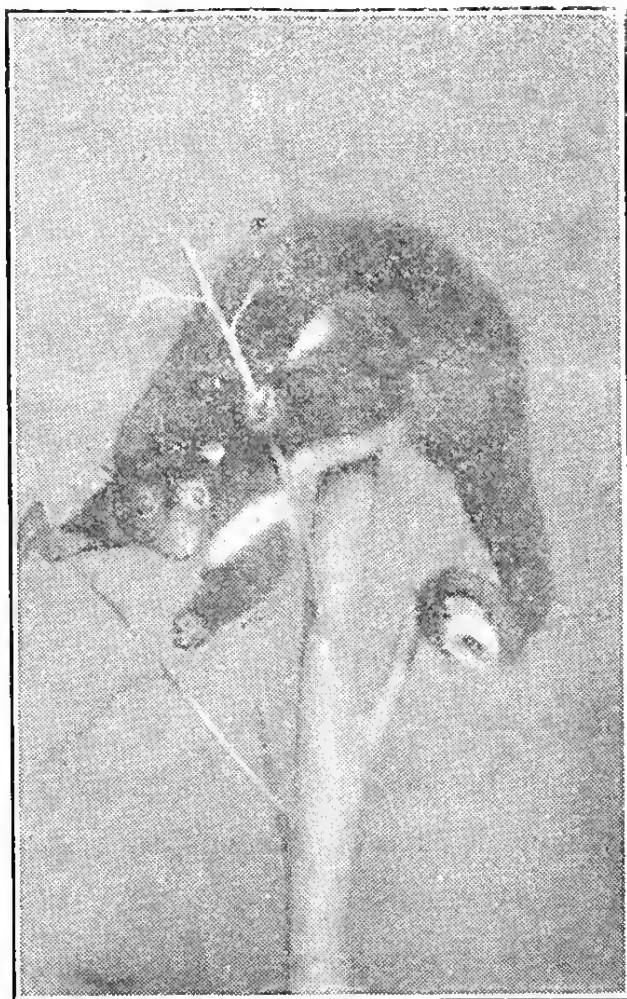
Notriolus taylori, Cart. et Zeck.

Notriolus tropicus, Cart. et Zeck.

Stetholus elongatus, Cart. et Zeck.

Mr. L. Wassel has collected a new species, *Notriolus minutus*, Cart. et Zeck, from Coen.

It is the opinion of the writer that there are many varieties of *Dryopidae* still to be recorded from North Queensland.



Copyright.

Pseudocheirus
herbertensis,
Collett, 1887.

Subsp. *herbertensis*,
Waite, 1899.

Evelyn,
North Queensland.

Photographs by
Herbert V. Chargois,
F.R.P.S., F.R.S.A.

13/2/1939.

LIFE HISTORY OF ANTHERAEA JANETTA.

By R. L. HUNTER.

Although in a previous issue of the North Queensland Naturalist, Vol. VII, no. 58, June, 1939, p. 4, this moth (illustrated by a plate) was referred to as *Copaxa janetta*, Dr. Jeffreys Turner has since definitely assured the writer that it should be designated by the older name of *Antheraea janetta*. It belongs to the great family of Saturniidae.

The life history of this moth, although it has been described before, is very interesting, firstly, because of the great variety of food plants which the larvae feed on, for example, not only the exotic species of all Citrus plants and the guava, *Psidium guajava*, but also many native plants such as *Careya australis* (cocky apple), *Evodia Elleryana*, besides many others, and secondly, for the great variations in colour of the moths, the males being far more variable than the female.

The eggs are attached in sets up to seven on the under surface of the leaf of the food plant, and when the small larva emerges it is greenish white and hairy with pale stripes along the sides. It grows very rapidly into a large green caterpillar with white stripes along its whole length, and on each segment are tubercles from

which numerous spines project.

At times the caterpillars become so numerous that they completely defoliate the trees of their food plant and many cocoons are to be gathered from which only parasitic flies and wasps have emerged. Few other larvae appear to be attacked so readily as those of the *Antheraea* moths.

When pupating, an operation which usually takes place on the food plant, it gathers a few leaves around it, forming a pale silk cocoon, which is very tough and it seems remarkable that a moth should be able to emerge from it. However, when the insect is ready to emerge, it cuts its way through the cocoon by a rotatory movement with the aid of the knife-like edges on the wings.

The male moth is usually smaller than the female, the tips of the wings being more pointed. The colour can be almost any shade between a pale cream to deep chocolate, leaving eye spots on top and underwings, although in the latter it is reduced to a mere dot. The general colour, however, is yellow. The female is not nearly so variable, and the common colour is usually a deep orange, the eye spots about six inches across the wings.

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NEXT MEETING, MONDAY, 10th JUNE, 1940:—

11th March, 1940:

Lecture by Mr. W. White, of Cairns,
"Our Tropical Freshwater Fish as
Observed in Aquarium."

New Member Elected:

Mr. Arnold Johnson, Edmonton.

13th May, 1940:

Dr. H. Fleeker, Report of recent visit
to Southern States.

New Members Elected:

Mr. F. Aland, Public Curator's Office,
Cairns.

Mr. W. White, Cairns.

THE LAND-SHELL HEDLEYA

By TOM IREDALE, Conchologist, The Australian Museum, Sydney. N.S.W.

Over fifty years ago the entomologist, W. W. Froggatt, discovered in the Cairns district a very curious little shell, which Cox described as a new genus *Hedleya*, calling the species *maeleayi*. At that time Hedley was only on the threshold of the career which was to make him one of the four leading conchologists of the world, and it is obvious that he drew up the description of his namesake. He allotted the little novelty to the family *Pupini-*

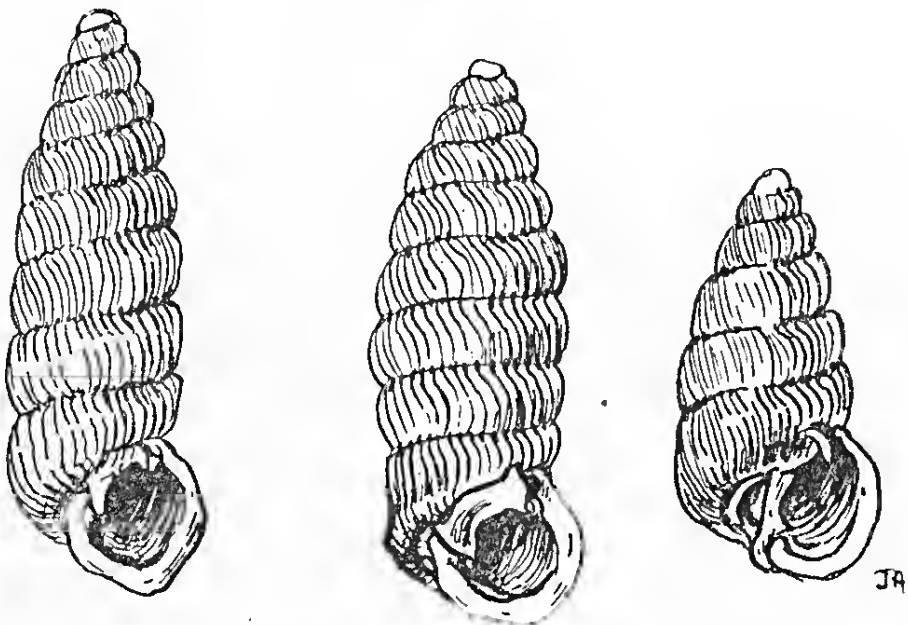
dae mainly on account of the presence of an anterior and posterior canal to the aperture. The *Pupinids* have circular apertures, and a closely fitting opereulum, which is commonly seen. This shell is still very rare, and I make an appeal to field naturalists of the Cairns district to search for this little snail and help to solve its problems. It, moreover, appears to be an appropriate object for research, as nothing like this form is known else-

where, and more than one species is now known. Mr. Sidney W. Jackson, collecting in 1908, found two specimens in the Tinaroo scrubs, Barron River, one "found under loose bark on standing tree in scrub," the other "in birds' nest fern." A few years later the Swedish naturalists, under Mjoberg, found another specimen at Evelyn, and upon examination it was found to be a distinct species, which Oohner called *Hedleya umbilicata*. This proves to be identical with the one found previously by Jackson in his birds' nest fern. Later again Hedley, visiting Green Island, picked up a broken specimen, which appears to represent another species.

Now Mr. Joc Shaffery has sent me down from Mossman, North Queensland, a specimen which is again different and is here named *Hedleya shafferyi*, new species. This shell is just on ten millimetres in length, with almost exactly one-third in breadth, that is, one-eighth of an inch broad and three-eighths of an inch long. The apex is tapering, the median whorls a little

swollen and the base a little contracted. It is white, and is closely longitudinally sculptured with wavy raised linear ridges, numbering about fifty on the last whorl the intervals between the ridges being a little wider than the ridges and smooth. There are about ten whorls, the fifth being the broadest. A pronounced spiral rib separates the base of the last whorl, which becomes concave. The aperture is a curious shape, the outer lip curving a little irregularly outward and then similarly irregularly basally receding to the ascending columella, leaving a semi-vertical anterior gutter. Thence across the body whorl a thick callus curves to form a similar posterior gutter with the edge of the outer lip. The irregular formation of this mouth seems to deny the possibility of an operculum, and this is the point that needs clearing up.

The sketches here provided of the three known species should prove the necessity for further information to classify correctly this group.



Hedleya macleayi, *H. shafferyi*, *H. umbilicata*.

RAPALA DEMOCLES, MISKIN (1884)

MY COLLECTING DIARIES

By M. J. MANSKI, F.R.E.S.

In looking over my diaries since 1932 I note the regular seasonal return of insects. By so doing I save considerable time by avoiding a haphazard search for specimens which may be required. One striking fact is evident in the annual return, almost to the same day of the year, of the butterflies. It shows me the busy months, the off-months, and many other items of interest. It takes me to the open forest in November, December and January. To the rain forests in February, March and April; to the low-lying, swampy country in May, June and July, and it shows me that August and September are months when butterfly collecting can be left alone. Year after year with regularity my records tell the same story, not only of butterflies and moths, but of *Coleoptera*, *Diptera*, *Hymenoptera*, etc., and if you notice in the first week in December the shrill sound of the *Cycadae* can be heard, only to disappear towards the end of January. The hot, steamy weather is the ideal time for the emergence of butterflies and beetles, and when the first storms of the season appear it is a signal for me to get ready as the collecting time is near at hand.

What a wonderful wealth of information do I receive when I note the entries: At Edge Hill, at Barron River,

at West Cairns, at Silver Cascades, etc.,

"noticed *Papilioncs*, etc., on wing," "obtained eggs of —," "larvae and pupae of —," "mosquitoes bad," etc.

Here I notice when new life-histories have been found. One in particular is before me that may be of interest. It reads: "At road to Barron Waters, noticed berry of *Strychnos Bancroftiana* on ground with small hole in side. Pulled down portion of creeper and obtained larvae and pupae of butterfly unknown to me." Imagine my surprise when the butterfly emerged to discover that it was a butterfly of which only the males were known, two being in the Queensland Museum at Brisbane and one in the Australian Museum at Sydney. These male specimens were in poor condition, and the female was not known. The butterfly is named *Rapala democles*, Miskin (1884), and the life history is herewith recorded: Egg, milky white, round, rough, with a central depression, laid on the berry. On emergence the young larva does not eat the egg shell, but starts to eat its way into the berry, where it remains, only emerging when that berry is eaten out and another berry is entered. The full-grown larva is: Head, light brown, first and second segments white with six black spots forming a diamond with two central spots, then three segments brown, then two white segments

turning pink before pupation, then three dark brown segments and the remaining segments white.

The larva is shiny, with a few short hairs. The sides of the larva are greenish and somewhat flattened.

Pupae, all brown in some cases or dark brown wing cases with thorax and abdomen pinkish in others; short, squat and fastened with a central girdle inside the berry husk. The butterfly emerges in the morning and has a very swift flight.

The description of the butterfly is: Male: Upperside black, central areas bright blue, tail to veil, two black, anal lobe black. Underside, greyish-white, bands brown, black spot near tail, anal lobe black.

Female: Both wings, especially the hind wings, much broader than in the male. Above, forewing with costa and termen broadly black, black area much more extensive and less heavily scaled, a central white area usually wholly beyond cell and usually wholly con-

fined between veins two and five. Cilia pale brown, hind-wing as in male. Blue more extensive and paler, especially in five. Beneath: Same as male, but paler and without the purple tint; discal band of forewing usually from vein one. Eyes slightly hairy, between eyes very pale brown; third joint of palpi slightly longer in the female.

The *Strychnos* referred to climbs to a great height up the trees and the butterfly keeps to the tops of the trees and so escapes detection.

This is one of many such occurrences, and a glimpse at the diary at the end of each year tells me the localities at which I collected during the year, what I obtained, where I got contentment with Mother Nature, and brings back memories of many happy days away from the busy thoroughfares and office routines.

A diary is essential to the collector.

* 2 SEP 1940 *

The North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. VIII.

CAIRNS, 1st SEPTEMBER, 1940.

No. 63

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns,
usually on second Monday in each month, at 8 p.m.

BUSINESS FOR NEXT MEETING, MONDAY, 9th SEPTEMBER, 1940 :—

Eighth Annual General Meeting, Election of Officers, Annual Report, Etc.
Annual Address: The Museum.

10th June, 1940:

Lecture by Mr. R. Collett, "Fiji,"
illustrated by lantern slides.

8th July, 1940.

New Member Elected:

Jack Meade, 49 Smith Street,

Cairns, as junior member.

12th August, 1940.

New Members Elected:

Dr. R. A. Robinson, Hides Hotel,
Cairns.

Mr. E. Markham, Babinda.

BOOK REVIEW.

15. FISHES OF AUSTRALIA.
The Fishes of Australia, Part 1. The
Sharks, Rays, Devil Fish and Other
Primitive Fishes of Australia and New
Zealand by Gilbert Percy Whitney,
Ichthyologist, Australian Museum,
Sydney; 280 pp., 303 figured illus-
trations. Published by the Sydney and
Melbourne Publishing Co. Pty. Ltd.
for the Royal Zoological Society of
New South Wales. Price 7/6. This
is written in quite popular language and
gives not merely descriptions of the
fish, together with their habits and

some interesting notes regarding the
individuals, but much additional in-
formation concerning attacks of sharks,
their capture, listing specific casualties
by these creatures, history, anatomy,
classification, etc. A glossary of tech-
nical terms is added. The book will
certainly appeal to fishermen, especially
those interested in sharks to whom
it will be an important reference,
whilst to students of natural history
and scientists generally, it will be
treasured for the very useful infor-
mation which it contains.

**BULBOPHYLLUM BAILEYI, F. Mueller and
BULBOPHYLLUM PUNCTATUM, R. D. Fitzgerald.**

By W. H. NICHOLLS, of Melbourne.

(Communicated by Dr. H. FLECKER).

Concerning B. BAILEYI, F. Muell.

This interesting Australian species which is not, by the way, small of stature like so many other members of the genus in Australia, was first described by the Baron in his "Fragmenta Phytographiae Australiae" (Vol. IX (1875), p. 5).

I have received specimens of *B. Baileyi* from the Mt. Fox district (via Ingham) in North Queensland (A. Glindeman, Coll.); also from Dr. H. Flecker, of Cairns. These latter were collected by Dr. H. Flecker at Middle Creek, growing vertically upward on bark of tree in the rain forest near Green Hill in the Gordonvale district (also in North Queensland), 14th January, 1940.

All the specimens so far secured have been, more or less. fragmentary, e.g., small pieces bearing one or two leaves; such are difficult (if not impossible) to cultivate and bring to flowering condition in Melbourne. Only from the last specimen sent down (Dr. Flecker's specimen, No. 6541) have I been able to produce flowers—an easy task when we consider the specimen—a healthy piece possessing three leaves, also two well-developed buds, which opened in a heated glass house on January 17th, 1940., a day or two after the receipt of the plant.

The flowers of *B. Baileyi* are really beautiful with their finely-marked (spotted) perianth-segments and remarkably formed labellum.

Description of B. BAILEYI, F. Muell.

Rhizome creeping, often forming extensive masses on the stems and

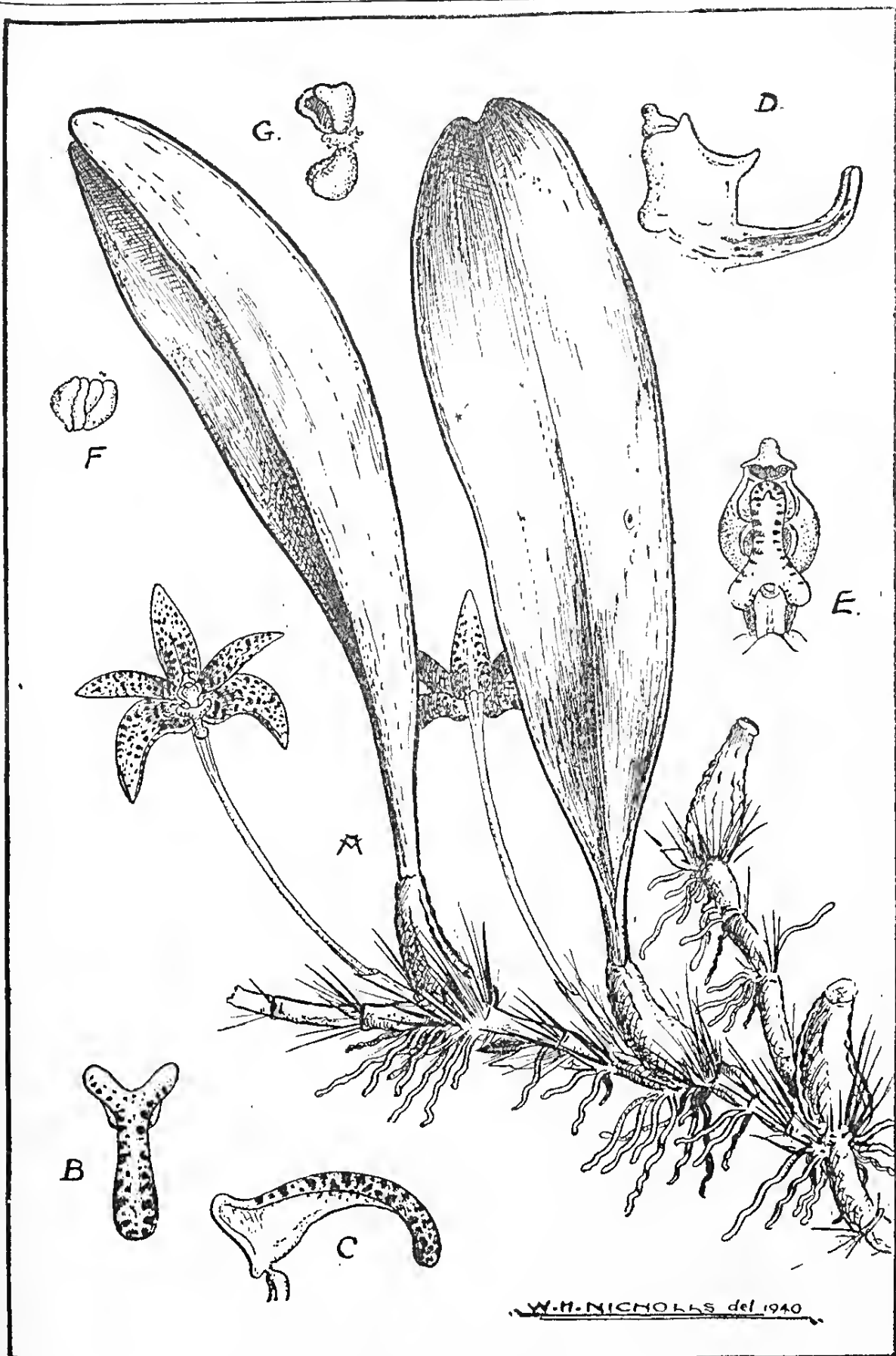
branches of tropical trees. Pseudobulbs short and angular. Leaves 5.20 cm. long, rather thick, channelled, the apex obliquely emarginate. Pedicel about 5.6 cm. long. Flowers pale yellow—about 4 cm. in diameter, spotted with a purplish colour on both sides. Dorsal sepal lanceolate; lateral sepals falco-lanceolate.

Petals shorter and narrower than sepals. Labellum linguiform, thick, obtuse, arched, spotted, channelled below. Column thick, the lateral wings toothed at the top, column foot arched, about as long as the column itself.

It is interesting to note that Fitzgerald described a *Bulbophyllum* species under the name *Bulbophyllum punctatum* in "Britten's Journal of Botany." Vol. XXI, p. 205 (1883). Habitat: Cape York, North Queensland.

Incidentally, descriptions under both names appear in "The Queensland Flora," Part V (1902); F. M. Bailey (Pp. 1536-1540 respectively). Here the colour of the flowers of *B. Baileyi* is not mentioned, other than sepals "spotted with purple on the outside, white on the inside. Petals . . . spotted like the sepals." Whilst *B. punctatum's* blooms are described as being "dull yellow spotted with red brown."

Fitzgerald's illustration in Vol. 2, Part 5 of "Australian Orchids" (under *B. Baileyi*, F. Muell.) is in keeping with his published description of *B.*



BULBOPHYLLUM BAILEYI, F. Muell.

KEY TO FIGURES:

- a. Typical specimen from Middle Creek near Green Hill, Gordonvale district (Dr. H. Flecker).
 b. Labellum from front.
 c. Labellum from side.
 d. Column from side.
 e. Column and Labellum from front (Labellum raised).

- f. Pollen masses.
 g. Pollen masses with a definite, but irregular viscid attachment—possibly an accidental occurrence in *Bulbophyllum*?
 For natural size of Fig. A, see description.

punctatum (already alluded to). This plate shows the flowers dull yellow, generously spotted on both sides of perianth. Facing this particular plate is the description of *B. Baileyi*, the same (practically) as appearing in Bailey's "Queensland Flora."

Mueller in his initial description (in Latin) in his "Fragmenta," proves conclusively that the colour of the flowers of *B. Baileyi* are yellow, spotted with purple.

Fitzgerald's plate (already referred to) in "Australian Orchids" is dated "1891." Fitzgerald died in 1892). I mention this because Fitzgerald does not figure or mention his *B. punctatum* in his monumental work ("Aust. Orch.") or again refer to it in any other publication; apparently he realised that but the one species was concerned, viz.:— *B. Baileyi*, F. Muell., the description of which was published eight years prior to that of his *B. punctatum*.

Mueller's type material of *B. Baileyi* is in the National Herbarium, Melbourne. The dried flowers have kept their original pale yellow ground colour, the other markings (spots, etc.) which were originally purple (really

the markings vary from purple to red-brown according to the depth of ground colour beneath (W.H.N.) have turned to red, but it should be said here that the fine dots on both surfaces of the perianth-segments have almost faded out—being apparent only along the margins. This is plain, also, in the writer's material—the flowers of which were originally so generously marked.

From the above notes, it is clear that *B. punctatum* of Fitzgerald must be, in future, regarded as synonym of *B. Baileyi*, F. Mueller.

Distribution: North Queensland.

Habitats:

1. Cape York (Fitz. under *B. punctatum*).
2. Trinity Bay (Fitzgerald).
3. Middle Creek near Green Hills, Gordonvale district (Flecker).
4. Bellenden Ker Ranges (Fitzgerald).
5. Mt. Bartle Frere (Mrs. L. C. Smith).
6. Herberton (Fitzgerald).
7. Mt. Fox, via Ingham (A. Glindeman).
8. Rockingham Bay (Fitzgerald).
9. Murray R., Tully (A. N. Burns, Dec., 1935), alt. 1,880 feet.



North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

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CAIRNS, 2nd DECEMBER, 1940.

No. 64

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns,
usually on second Monday in each month, at 8 p.m.

BUSINESS FOR NEXT MEETING, MONDAY, 9th DECEMBER, 1940 :—

Exhibition of Shells by Mr. George Ernst and others.
Address by Dr. H. Flecker on "Shells."

9th September, 1940:

Annual General Meeting.

The following officers were elected:

President: Dr. H. Flecker.

Vice-Presidents: Miss Hooper and
Mr. F. R. Morris.

Hon. Secretary and Treasurer: Mr.
J. Wyer.

Committee: In addition to above,
Miss Jean Whittick and Messrs. R. J.
Gorton and J. Foster.

Hon. Auditor: Mr. R. J. Gorton.

New Member Elected:

Mr. Walter Kirkwood, 86 Abbott
Street, Cairns.

14th October, 1940:

A general discussion on means pro-
posed to limit prevalence of bush fires
took place.

11th November, 1940:

Lecture by Mr. Alan Gordon, Fores-
try Products Section of C.S.I.R., on
Commercial Applications of Timbers.

New Member Elected:

Mr. C. P. Ledward, Burleigh Heads.

THRIXSPERMUM ALBUM (Ridl.) Schltr.;

The North Queensland Orchid Hitherto Known as
CLEISOSTOMA CONGESTUM, Bailey.

By the Rev. H. M. R. RUPP, Northbridge, N.S.W.

Rather more than five years ago,
when living at Woy Woy in this State,
I received through Dr. H. Flecker, of
Cairns, some small epiphytic orchids
collected at Waugh's Pocket in the
Eubenangee Swamp by Mr. G. Bates,
between that town and Innisfail. They

were not flowering, and I was unable,
at the time, to suggest their identity,
though I thought it likely that they
would fall within Blume's genus
Cleisostoma. This genus is not now
generally recognised by botanists; but
here in Australia we have been com-

pelled to retain it until we are in a position to allocate the various species included in it to their proper genera. Mr. Bates subsequently sent further material to me at Woy Woy; and the largest plant did quite well in my bush-house for a considerable time. It produced a number of flowers. (For a description and photograph, see the "Australian Orchid Review" for September, 1938, art. "The Genus *Cleisostoma* in Australia"). Here it may suffice to say that the flowers are set in a densely-compressed raceme forming a "capitulum" or head at the apex of a long or short smooth peduncle arising from beneath a leaf. They are extremely fugacious, lasting only a few hours. Colour white or pale cream; perfume very strong, resembling tuberose. There are rarely more than two flowers out at the same time on one head, and usually there is only one. Flowering continues for about six weeks. As soon as the flowers began to appear, I had little difficulty in identifying the plant with F. M. Bailey's *Cleisostoma congestum* (Q. Fl. V. p. 1555).

It appeared to me, however, that this orchid differed very widely, particularly in the structure of the flower, from all the other supposed species of *Cleisostoma* in Australia. As Bailey himself observed, the flower is almost suggestive of a small *Dendrobium*. It was about this time that I learnt that the genus *Cleisostoma* was being generally discarded. Dr. R. S. Rogers, whose advice I asked, suggested that the great Dutch botanist, J. J. Smith, was the man who could probably solve the identity of our Australian species; but he was reported to be seriously ill, and there was the difficulty of sending him adequate material. Dr. Rogers was so extremely kind as to send me a translation, in his own handwriting, of J. J. Smith's treatment of *Sarcanthus* and related genera, in "Natuur. Tijdschr. Nederland-Ind." LXXII, 1913. From this I learned that Smith considered the Queensland *Cleisostoma Keffordii* Bail. should be transferred to the genus *Camarotis*. And Dr. Rogers' notebook will be most valuable if and when I am able to deal with other Australian species. But it threw no light on

C. congestum. However, the doctor shortly afterwards kindly presented me with Ridley's "Materials for a Flora of the Malay Peninsula"; and here, at last, I considered that I had found some clue which might lead to the real identity of the little North Queenslander. It appeared to me to fit fairly well into either one of two genera hitherto unknown in Australia: *Dendrocolla* Lour. and *Thrixspermum* Bl. I was disposed to favour the former, and formed the opinion that Bailey's plant was very closely allied to, if not identical with, Ridley's *Dendrocolla alba*. I was not prepared, however, to express this view in print without something tangible in the way of evidence to support it.

Evidence has come from an unexpected quarter. Recently I have been engaged at the National Herbarium in Sydney in overhauling and revising the Orchidaceae; and after some months among the Australian specimens I turned to those of the Malayan and Western Pacific regions. Here awaited me a surprise. Opening up a specimen of the late Dr. Schlechter's from Sumatra, labelled "*Thrixspermum album* (Ridl.) Schltr.," I recognised it instantly as an excellently-preserved example of the now familiar *Cleisostoma congestum*. A little investigation soon proved that Schlechter had removed Ridley's *Dendrocolla alba* to the genus *Thrixspermum*.

I do not think there can be any reasonable doubt that this settles the identity of Bailey's plant. It is true that there are no actual flowers with Schlechter's specimen; but it is a very good specimen otherwise, and the capitula of buds are there, and the habit of the plant and arrangement of the strap-like leaves are precisely identical. As Schlechter probably never saw the Queensland plant, and was therefore unaware of its identity with the Malayan, I had to try and ascertain whether Ridley's specific name had priority over Bailey's. Through the courtesy of the staff at the Sydney Public Library I was able to establish the fact that it had. *Dendrocolla alba* was published in Journ. Roy. As. Soc. G. Br. vol. XLIV; and though we were unable to find the

actual date of this volume, other evidence showed that it could not have been later than 1892. *Cleisostoma congestum* first appeared in Proc. Roy. Soc. Queensland. vol. XI, 1894-5. Although Bailey's name is particularly appropriate to the inflorescence of this orchid, it must therefore pass out in favour of Ridley's.

Bailey received his original (and apparently only) specimens from L. J. Nugent, the locality given being Cairns. In his "Queensland Flora," published some years later, the description of *Cleisostoma congestum* is obviously taken from the original in the Royal Society Proceedings. He

says "peduncle usually shorter than the leaves"; but he would probably have modified this had further material been made available to him. In my experience of the specimens sent by Mr. Bates (I should say about 16 in all), the peduncle often exceeds the leaves considerably. In Schlechter's Sumatran specimen one is quite twice as long as the longest leaf. Bailey also remarks that the longest stem seen by him was under two inches. The plant which flowered for me at Woy Woy had a stem of, at least, four inches. It was, however, a much larger plant than any of the others.

NEW LIFE HISTORIES OF SOME SKIPPER BUTTERFLIES.

Family HESPERIIDAE.

By M. J. MANSKI, F.R.E.S.

In my previous notes in the "North Queensland Naturalist," No. 62, June, 1940, I drew attention to my diaries. Looking over these again, I abstract more life histories not previously recorded and worthy of perpetuating.

HESPERILLA SEXGUTTATA SELA (Waterhouse).

Firstly, I note under date 20th September, 1935, an incident recalling a visit by Dr. T. Guthrie, who captured a small reddish-brown white-spotted skipper in the vicinity of the wharves at Cairns, and I was requested by Dr. Guthrie to endeavour to locate this butterfly and to seek out its life history, if possible.

The first attempt was unsuccessful. However, on 24th September, 1935, I made the following record: "Dr. Guthrie left for Coen; found complete life history on *Cyperus pinnatus*." Little did I realise at the time that the recording of that life history was to supply the reason for changing the name of the genus of this skipper and place it in another group. The eggs are laid on the edge of the long grass like leaves of this sedge, its food plant, from which emerge the young

larvae. The latter cause the leaf to curl over thus forming a retreat during the daytime, emerging only at night to feed. The growing larvae pulls a few of the leaves together, fastens them with silk, leaving a cylindrical tube in the centre in which it hides. It also pupates in this tube. Whilst the larva is greenish-white in colour, the pupa is brown with a peculiar pupal cap on the head. When the butterfly emerges, it carries this cap to the top of the tube and casts it off, and this peculiarity was the reason for changing the name from *Toxidia sexguttata sela* (Waterhouse) to *Hesperilla sexguttata sela*.

HASORA HURAMA HURAMA, Butler.

Proceeding through my notebook, I come to Monday, 21st September, 1935, with the entry: "Saw Broad Banded Awl laying eggs on *Derris trifoliata*—got complete life history." Although merely an entry, it implied the discovery of a new life history, and here it is:

Egg laid on young shoots of food plant (*Derris trifoliata*).

Head, dark brown with lighter spots above, white-haired.

Body, green above with four white lines. Sides pinkish with four velvety black spots reaching from the head to the posterior segments. White-haired.

Pupa. Powdered with white, with three black spots on top of thorax, and one on each side near the eyes. More black spots on each side at the posterior ends.

This butterfly has quick jerky flight and frequently settles to rest and is named *Hasora hurama hurama*, Butler.

The larvae of this butterfly plays havoc with the young growth of *Derris trifoliata* and a glance at the plant will soon convince one whether the butterfly has been laying her eggs there or not. The leaves are joined together with silk and pupation takes place in these shelters.

TELICOTA (ASTYCUS) DOBBOE AUTOLEON, Miskin.

In the search for further notes of the Hesperidae, I pass over a number of life histories of insects belonging to other families until I arrive at an entry dated 11th June, 1939, which reads: "Found globular egg of butterfly on the under side of the leaf of *Cordyline terminalis*, a liliaceous plant growing in the rain forest. The egg substance giving it a smooth appearance, but when magnified it appears to be pitted and ribbed vertically." The greenish caterpillar (whitish with appears to be covered with a whitish a greenish suffusion) has a dark brown head. As in the case of the *Cyperus* mentioned above, it curls the edge of the leaf forming a retreat in which it hides, and later on, pupates. The pupa is of a light brown colour and is covered with a white powder. The butterfly is *Telicota (Astycus) dobboe atoleon*, Miskin. It is common about Cairns, but rarer elsewhere. The upper side of the wings are reddish-black with pale orange markings, and the underside reddish-black and apex dark red-brown.

TELYCOTA (ASTYCUS) BRACHYDESMA, Lower.

Another skipper closely allied to this one, but much smaller and rarer,

is *Telicota (Astycus) brachydesma*, Lower. I discovered its life history on the peculiar grass, *Leptaspis Banksii*, which grows in the rain forest. The upper side of this butterfly is black with deep orange-coloured markings, whilst the underside is reddish-brown with similar deep orange-coloured markings, whilst the underside is reddish-brown with similar deep orange-coloured markings.

NOTOCRYPTA WAIGENSIS LEUCOGASTER, Staudinger.

The eggs are laid on the leaves of small plants of *Alpinia caerulea*, a zingiberaceous plant growing in the rain forest. As with the case of other skippers, the young larva curls the edges of the leaf forming a tube in which it rests during the day and finally pupates when fully grown. The larva is long, slender and pale green in colour.

The pupa is long and cylindrical and about an inch and a half in length, greenish in colour and something that is unusual amongst the pupa of butterflies is the fact that the proboscis is more or less free and extends beyond the posterior end of the pupa.

The butterfly is commonly called the Banded Demon, and has a short swift flight. It will often settle on one's person if he remain still and quiet. The upper side of the wing is black with a broad white band across the forewing and a variable number of spots between this band and the apex of the wing. The underside is slightly paler than the upper side. It is fairly common in the rain forest where the food plant may be growing and may be found on the wing almost throughout the year.

Much further research is desirable to discover the habits and life histories of our northern skippers and many have yet to be probed and investigated, but as my time in Cairns is drawing to a close, I would be glad to learn that some enthusiast would be carrying out the work I have been engaged in. Who is going to be that enthusiast?

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CAIRNS, 1st MARCH, 1941

No. 65

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns,
usually on second Monday in each month, at 8 p.m.

BUSINESS FOR NEXT MEETING, MONDAY, 10th MARCH,

Lecture by Mr. B. Funnell, "Cultivation of Bananas." Illustrated by growing plants.

REPORT OF MEETING.

9th December, 1940:

Address by Dr. H. Flecker on
"Shells."

Exhibition of Shells by Messrs.
George Ernst and Edwards.

New Member Elected:

Mr. R. L. Carne, Hambleton Mill.

SOME CURIOUS INSECTS OF THE ORDER COLEOPTERA.

By J. G. BROOKS, B.D.Sc., L.D.Q., F.R.E.S.

When thinking of beetles one immediately recalls the large showy varieties, but there are many families, though containing few species of medium to small-sized insects are, nevertheless, very beautiful when viewed through binocular microscopes.

FAMILY PAUSSIDAE.

These are rare sluggish brown or black beetles found under bark or logs or in ant nests. They are interesting because of their broad flattened laminated antennae. The life histories of the Australian species are not known.

FAMILY CUPIDAE.

The species of this family are extremely rare, with three known Australian species. The clytra of the different species are well sculptured and the wing-venation is the most primitive type still existing. The larvae are cylindrical wood-borers.

FAMILY RHYSODIDAE.

These are small blackish beetles with well-sculptured pronotum and clytra. The antennae resemble strings of beads. The life histories of the Australian species are not known, but the writer has taken the adults in decayed

logs, which would indicate that the larvae are wood-borers.

FAMILY CIIDAE.

Small to minute beetles found feeding on fungi. They carry an armature of horns on the head, pronotum, or both. Little study has been done on this family and a number of Australian species are yet to be described.

FAMILY BYRRHIDAE.

These are small, almost spherical beetles found in moss in scrub country. Some are dull, whilst others are brightly metallic in colouring. The head of the insect is completely retractile and the appendages are capable of complete apposition to the body, hence the name of "Pill Beetles" is applied to the family.

FAMILY PTINIDAE.

There are a number of Australian species of this family with two distinct sub-families; one being a boring type and the other non-boring. The family is best known by some introduced world-wide species. The "greater death-watch" beetle *Anobium punctatum* which does damage to wooden houses and furniture; the "drug-store" or "bis-

cuit weevil" *Sitodrepa panicea* and the "cigarette beetle" *Lasioderma serri-corne* which as well as attacking tobacco causes great damage to library books.

FAMILY CANTHARIDAE.

This family is of particular interest because the bodies of a number of species contain a substance which raises blisters when applied to human skin. Some of the species are particularly handsome. There are a number of stages in the life history, but none of the life histories of the Australian species is known, but the larvae are found in the nests of native bees, wasps, locusts, cockroaches and man-tids.

FAMILY SCOLYTIDAE.

These are small broad beetles found in the bark of trees and in fungi. They are most interesting because of the habits of the larvae. The larvae are blind, legless, curved grubs, which bore tunnels. These tunnels are characteristic of the family as they radiate from

a common centre. A special fungus (*Ambrosia*) is cultivated in the tunnels and is used as a food by the larvae.

FAMILY BRENTHIDAE.

To the unenlightened the species of this family are mistaken for true weevils (family *Curculionidae*). The larvae are similar to those of the family *Curculionidae*. *Brenthidae* are long and slender beetles, a number being of various shades of brown whilst others are quite prettily marked. A number of varieties are collected from ants' and termites' (white ants') nests, whilst others are obtained under the bark of decaying logs.

This short article is not claimed to be an outstanding piece of scientific research, but it is hoped that by pointing out items of interest in some of the less known families of beetles that someone may become interested and carry on the work of such departed entomologists as Carter, Tillyard, Lea and Sloane.

BIRDS OF CHILLAGOE DISTRICT.

By Mr. and Mrs. E. NOEL GOODE, Chillagoe.

Birds seen in Chillagoe and environs, including some aquatic birds noted on a trip to Boomers Pools and adjoining swamps on the Walsh River. This is a wonderful country for birds.

Most of the birds have been seen in Chillagoe in our garden and on the adjoining creek.

Pelican, *Pelecanus conspicillatus*—in Chillagoe on dam.

Bustard (Plain Turkey), *Eupodotis australis*—come in from plains past Rookwood.

Jabiru, *Xenorhynchus asiaticus*, Walsh River and down Chillagoe Creek towards the Walsh River; also seen flying overhead above the house.

Brolga, *Megalornis rubicundus*, Walsh River.

Black Swan, *Chenopsis atrata*, seen flying over Chillagoe.

Lewin Honey-eater, *Meliphaga lewini*. In our garden.

Grey Whistler, *Pachycephala gri-seiceps*. In our garden.

Shining Starling, *Aplenis metallica*—on tree with red flowers in corner of

our yard. Migratory.

Koel, *Eudynamis orientalis*—in our garden. A blackish satin-coloured bird—yellow beak. Some say it is a male Channel-billed Cuckoo.

Tawny Frogmouth, *Podargus strigoides*. In our garden.

Bookook Owl, *Ninox boobook*. In our garden.

Brush Turkey, *Alectura lathamii*—on limestone bluffs about a mile or so from Chillagoe.

Magpie Lark, *Grallina cyanoleuca*. In our garden.

Grey Butcher-bird, *Cracticus torquatus*. In our garden.

Black-backed Butcher-bird, *Cracticus mentalis*. In our garden.

Pied Butcher-bird, *Cracticus nigrogularis*. In our garden.

Black-backed Magpie, *Gymnorhina tibicen*. In our garden.

Raven, *Corvus coronoides* and Crow, *Corvus ceciliae*. In fowl yard picking scraps, before the effect of the drought caused deaths of unfortunate beasts in the bush.

Black-faced Cuckoo-shrike, *Coracina novae-hollandiae*. In our garden.

Blue-winged Kookaburra, *Dacelo leachi*. In our garden.

Apostle-bird (Grey Jumper or Twelve Apostles), *Struthidea cinerea*. In our garden.

Channel-billed Cuckoo (Storm Cuckoo), *Scythrops novae-hollandiae*. Flies over house.

Stone-curlew, *Burhinus magnirostris*. Boomers, Walsh River.

Jacky Winter, *Microeca fascians*. We are not sure of this bird.

"hawks" insects from telephone wires in the garden.

Wood-swallow, Swift and bigger Swallow.

Tree Martin, *Hylochelidon nigricans*—flying and on telephone wires and "hawking" between our house and the limestone bluffs.

Tawny-breasted Honey-eater, *Xanthotis flaviventer*. In our garden.

Blue-faced Honey-eater (Banana-bird), *Entomyzon cyanotis*. In our garden.

Noisy Friar-bird (Leatherhead), *Phi-*



Bower Bird Playground, Chillagoe District.

Willy Wagtail, *Rhipidura leucophrys*. In our garden.

Little Yellow Robin, *Eopsaltria kempi*. By creek.

Restless Fly-catcher, *Seisura inquieta*. In our garden.

White-winged Triller, *Lalage tricolor*. In our garden.

Varied Triller (White line on face), *Lalage leucomela*. In our garden.

Forest Kingfisher, *Halcyon macleayi*. In our garden.

Dollar-bird, *Eurystomus orientalis*—in late afternoon in gum trees by the creek in front of our house.

Rainbow-bird, *Merops ornatus*—

lemon corniculatus. In our garden.

Yellow Honey-eater, *Meliphaga flava*.

Noisy Miner, *Myzantha melanocephala*. In our garden.

White-gaped Honey-eater, *Stomiopeira unicolor*. In our garden.

Peaceful Dove, *Geopelia placida*. In yard.

Diamond Dove, *Geopelia cuneata*. In yard.

Other Pigeons out towards the Walsh River, namely:—

Squatter Pigeon, *Geophaps scripta*.

Bronzewing Pigeon, *Phaps chalcopterus*, and

Torres Strait Pigeon, *Myristicivora spilorrhoa*.

Lesser Lewin Honey-eater, *Meliphaga anomala*—Not sure of all these—quite a number of varieties on creeper flowers:—

Purple-gaped Honey-eater, *Meliphaga cratitia*.

White-streaked Honey-eater, *Trichodere cockerelli*.

Graceful Honey-eater, *Meliphaga gracilis*.

White-lined Honey-eater, *Meliphaga albolineata*.

Bridled Honey-eater, *Meliphaga frenata*.

Singing Honey-eater, *Meliphaga virens*. All in our garden on blossoms or creepers.

Green-backed Honey-eater, *Glycihaera claudi*. In garden.

Yellow Weebill, *Smicrornis flavescens*. In our garden.

Mistletoe-bird, *Dicaeum hirundinaceum*. On mistletoe on a tree by the creek.

Forty-spotted Pardalote, *Pardalotus quadragintus*—Chillagoe and nesting in banks a few miles out by Calcefer.

Striated Sittella, *Neositta striata*, on tree trunks.

Bower-bird, *Chlamydera* sp., in our garden—eats vegetable seedlings—comes in large numbers—playgrounds known in patches of scrub by Chillagoe—calls "Wheeze."

White Cockatoo, *Kakatoe galcrita*—Chillagoe Creek.

Yellow-tailed Black Cockatoo, *Calyptrorhynchus funereus*. Chillagoe Creek.

Galah, *Kakatoe roseicapilla*, Chillagoe Creek.

Other Parrots seen in bush and creek include:—

Red-collared Lorikeet, *Trichoglossus rubritorquis*.

Red-winged Parrot (also called Red-winged Lory or Crimson-winged Parrot) *Aprosmictus crythropterus*.

Pale-headed Rosella, *Platycercus adscitus*. On tennis court wire and eating grass seeds by the court.

Budgerygah, *Melopsittacus undulatus*—green—come in flocks along the creek during dry season.

Dusky Wood-swallow, *Artamus cyanopterus*. On telephone wires in our garden, and about three other kinds of swallows.

Quail—its track and about bush.

Ground Squirrel, *Anthus australis*—About Chillagoe.

Banded Finch, *Steganopleura bichenovii*. In our garden.

Zebra Finch, *Taeniobygia castanotis*. Mungana (about ten miles from Chillagoe).

Painted Finch, *Cayleya picta*.

There are other finches in our gardens and about Mungana.

Brown Hawk, *Falco berigora*.

Collared Sparrow-hawk, *Accipiter cirrocephalus*.

Wedge-tailed Eagle, *Uroaetas audax*.

Osprey, *Pandion haliaetus*—Has been shot at Boomers, Walsh River.

Rail, adjoining swamp towards Boomers.

Dotterel—On smelters dam.

Spur-winged Plover, *Lobibyx novae-hollandiae*—Boomers swamps, Walsh River.

Darter, *Anhinga novae-hollandiae*. On trees in front of our house.

Ibis, *Threskyornis* sp. In creek by our house.

Spoonbill, *Platalea* sp. In creek by our house.

Black Cormorant, *Phalacrocorax carbo*. In creek by our house.

White-faced Heron, *Notophox novae-hollandiae*. In creek by our house.

Coot, *Fulica atra*, Boomers, Walsh River.

Egret, *Egretta alba*, Boomers, Walsh River.

Teal, *Querquedula*; Whistling Tree-duck, *Dendrocygna arcuata*; and Black Duck, *Anas superciliosa*—In creek by our house and on smelters dam.

Pygmy Goose, *Nettapus* sp., Bittern, Maned Goose (or Wood-duck), *Chenonetta jubata*.

Nankkeen Heron, *Nycticorax caldonicus*.

White-headed Shelduck (or Burdekin Duck), *Tadorna radjah*—At Boomers, Walsh River.

Oriental Dotterel, *Charadrius veredus*—migratory—on our tennis court when pools of water were on concrete—they must have been migratory and noticed the water.

There are about 91 species—we are not sure about all the honey-eaters. Some are similar in marking, but vary in size.

26 SEP. 1941
VICTORIA.

The North Queensland Naturalist

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CAIRNS, 1st SEPTEMBER, 1941

No. 66

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns,
usually on second Monday in each month, at 8 p.m.

ANNUAL GENERAL MEETING, MONDAY, 8th SEPTEMBER.

BUSINESS: Election of Officers;
Annual Balance Sheet, etc.

THE ORANGE-BLOSSOM ORCHID.

(SARCOCHILUS FALCATUS)

By the REV. H. M. R. RUPP, Northridge, N.S.W.

It was a pleasant surprise recently to receive a raceme of this lovely little orchid from North Queensland. Dr. Flecker very kindly sent it by air mail, with a label attached indicating that it had been collected at Tarzali, near Millaa Millaa by Mrs. C. L. Paine. Hitherto this charming epiphyte has been regarded as one of those which do not venture into the tropics. Its discovery so far North reveals its range of habitat as very extensive, for it is one of the five known epiphytic orchids of Victoria. In New South Wales and Southern Queensland it occurs in abundance in certain areas, and was doubtless far more plentiful before the march of civilisation cleared the scrubs and introduced the modern orchid vandal.

It was named and described by Robert Brown in his famous "*Prodromus*," so that its first discovery goes back to the very early years of the nineteenth century. Brown's specific name "*falcatus*" is in allusion, of course, to the scythe-like shape of the leaves. For many years in southern areas it has been known as the Orange-blossom Orchid, on account of its white clusters of strongly perfumed flowers. But it is a variable species, and some of its varieties, including that from North Queensland, are not particularly suggestive of orange-blossom. FitzGerald named and described a N.S.W. mountain form as a distinct species, *S. montanus*; but subsequently he rightly reduced this to a variety of *S. falcatus*. Indeed, intermediate forms are so fre-

quently met with that it can hardly be given definite varietal rank.

In the typical form the sepals and petals are wholly glistening white, but some varieties have a purplish median line on the outside of these segments. In Mrs. Paine's specimen this line is red. In the typical form, again, the inside of the lateral lobes of the labellum is suffused with orange, traversed by a few red striae. In the Millaa Millaa flower the orange suffusion is only just perceptible, but the red striae cover the whole lobe and extend to the lower part of the column; the effect is very charming, but it detracts from the orange-blossom whiteness of the flower.

The most beautiful form of this orchid known to me I discovered on a Beech Tree (*Nothofagus*) in the neighbourhood of Barrington Tops, in N.S.W. The plant was unusually large, and the flowers were nearly two inches across. They were a rich cream colour, with a strong perfume of tuberoses. The orange suffusion and the red striae of the labellum-lobes were only very faintly in evidence. I have never seen this form elsewhere.

Strangely, the odour of this orchid cannot always be termed a perfume. In a very early-flowering form found in gullies of the Paterson district, it was decidedly objectionable, and very far from either orange-blossom or tuberoses fragrance.

The form *montanus* is a smaller plant than the type, and the spur under the labellum is prominently blotched with purple. This blotching, however, is sometimes present in the larger forms.

BULBOPHYLLUM TORESSAE, BAILEY

(An interesting and little-known Orchid of Queensland North)

By W. H. NICHOLLS, Melbourne.

B. Toressae, Bail., is a most diminutive plant with a creeping rhizome closely adhering to the bark of trees or to rock surfaces by small roots from the underside. The plant rarely extends over 2 inches (about 8cm.), often forming radiating patches. The upper surface closely covered by distichous, closely sessile, ovate-lanceolate, very rugose leaves which are so concave on the upper face as to be somewhat cymbiform (boat-shaped), about 5mm. long (in my specimens) with a single nearly sessile flower nestling at the base. Flowers yellowish-white, slightly marked with red (perianth white, the labellum and column yellow); subtended by a prominent scarious bract. Sepals broad, about 5mm. long, the lateral ones very much so, their bases adnate to the column foot, forming a short, blunt almost truncate spur. Petals white, of delicate texture, much shorter and narrower than the dorsal sepal. Labellum sessile on a broad base, as long or longer than the lateral sepals, 3-lobed, but not markedly so, a wide channel between the lateral lobes; lateral lobes elotted with red on a yellow ground, very short; middle lobe blunt and much thickened at the apex, wholly yellow. Column very short, wings prominent. Column foot long and broader at the end, marked with red. Anther green.

Flowering during June, July. (The Author's plants flowered in a glass house in Melbourne during January).

Distribution: North Queensland; Habitats: On the shady rocks, Whelanian

Pools (Bailey); Upper Mossman River (Flecker); Campbell's Creek (Flecker).

B. Toressae is, to my mind, especially interesting for at least three features—salient characteristics of **B. Toressae**. (1) The quaintly-pitted nature of its foliage; (2) The habit of producing its flowers, each directly from the basal cavity of the leaf-lamina (the majority of other **Bulbophyllum** species produce their blooms on pedicels which come directly from the rhizome, at the base of the pseudo-bulb). (3) The transparent and delicate nature of the petals.

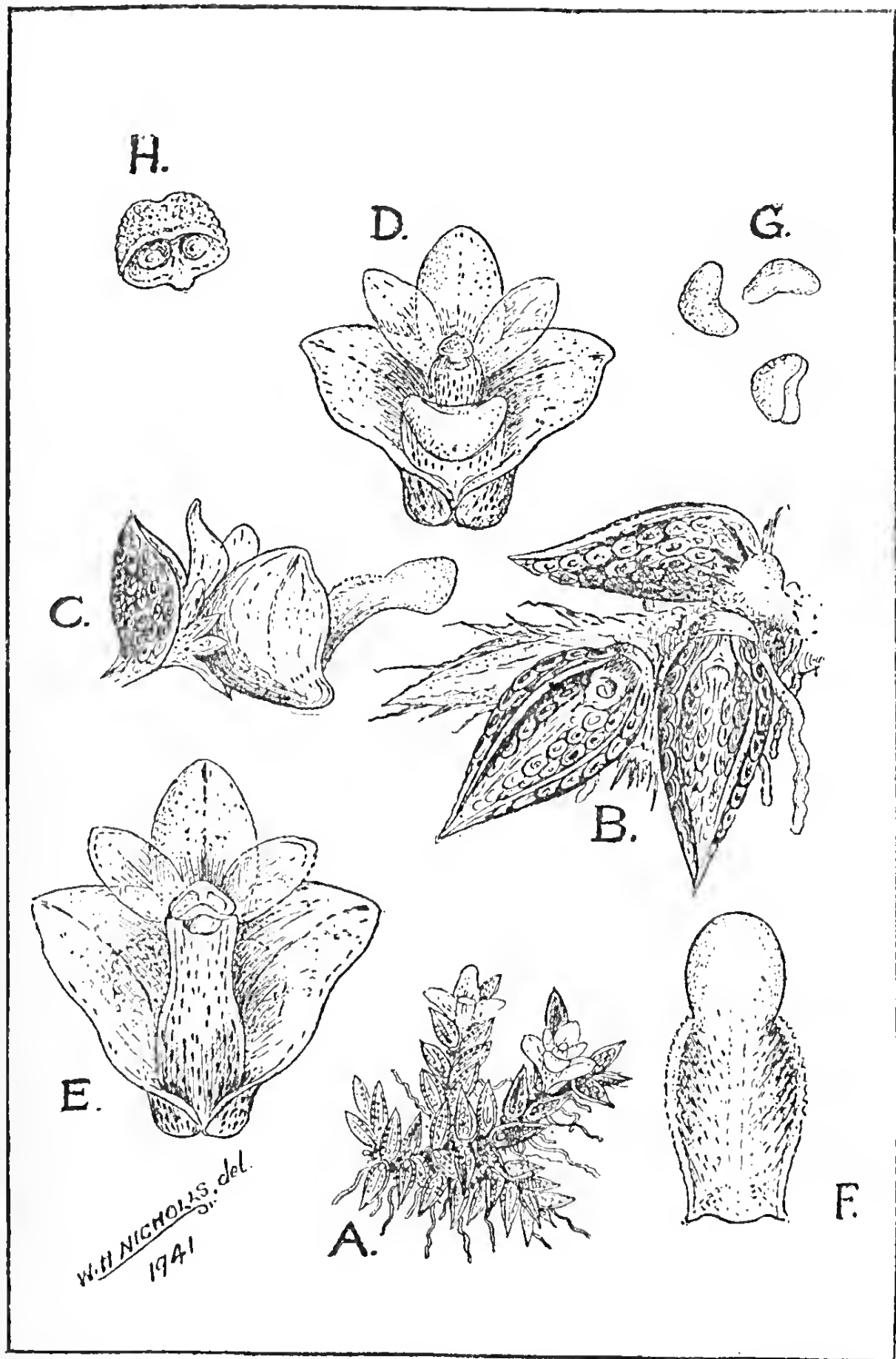
B. Toressae was named by Bailey after Miss Toressa Meston. Concerning this apparently rare and remarkable species, Dr. Flecker writes, (7-2-41): "This tiny chap is by no means common. I have never seen it anywhere in considerable quantity. Once I found it on the vertical trunk of a standing tree at Campbell's Creek, but could not find it elsewhere in the neighbourhood despite repeated hunts at several subsequent visits. The only other locality I have met it was at Upper Mossman River, over 4,000 feet, and only last week at Mt. Lewis (3,000 feet). I intended bringing the latter down, but I inadvertently left it behind. I have never seen it in flower. It only grows in the rain forest."

(NOTE.—The description of **B. Toressae** given here has been adapted from Bailey's*—the details, however, have been revised so as to agree with the specimens in hand).

(*Bail. 3rd. Suppl. Q'd. Fl. 72.)

BOOK REVIEW.—16. *Combing the South Seas*. By Sir Joseph Verco. Edited by D. C. Cotton. Published by the Mail Newspapers Ltd., 174 pp., 18 plates, some coloured, with Catalogue of Marine Mollusea (960 names) and Index, 23 pp. The author, a leading Adelaide physician is also a prominent conchologist, who during his holidays chartered boats and combed

the coastal waters between Beachport in the South-eastern part of South Australia to Fremantle, West Australia, from the beach to 300 fathoms. The expeditions are described in the simplest language. To those interested in the method of collecting mollusea, especially those familiar with the locality and shells, the book is of very considerable value.



KEY TO PLATE.

Figs.—(A) Plant in bloom; (B) Leaves, etc.; (C) Flower and leaf from side; (D) Flower from front; (E) Flower—labellum and anther removed; (F) Labellum from above; (G) Pollen Masses; (H) Anther case.
(Figure A, Natural Size).

BUPRESTIDAE OF NORTH QUEENSLAND

By J. G. BROOKS, B.D.Sc., L.D.Q., F.R.E.S.

This list has been compiled from available literature and from personal collecting, but I am inclined to the view that many more varieties already described can be included in this list as well as many undescribed species. In compiling this list the late H. J. Carter's classification has been adopted.

Sub-Family Buprestinae.

Tribe Agrilini.

Sub-Tribe Agrili.

Agrilus anachaetus, **Obenb.**, Cape York.
bispinosus, **Cart.**, Innisfail.
brevis, **Cart.**, Innisfail.
deauratus, **Mael.**, Townsville.
doddi, **Cart.**, Townsville.
macleayi, **Cart.**, Cairns.
nesigona, **Obenb.**, Cape York.
nitidus, **Kerr**, Cape York.
solemnis, **Obenb.**, Cape York.

Synechocera cyaneipennis, **Cart.**
cupripes, **Cart.**, Cairns.
Neospades cruciata, **F.**, Townsville.
cuprifera, **Gestro.**, Townsville.
lateralis, **Blkb.**, Dimbulah.

Cisseis albosparsa, **L. et G.**, Cape York.
elliptica, **Cart.**, Herbarton.
inflammata, **Cart.**, Cooktown.
pulchella, **Cart.**, Cooktown.
regalis, **Thoms.**, Cairns.

Aphanisticus browni, **Cart.**, Innisfail.
endeloides, **Cart.**, Cairns.

Habroloma australasiae, **Gestro.**, Cairns.

Trachys blackburni, **Kerr**, Cairns.

Tribe Chrysobothrini.

Chrysobothris viridis, **Mael.**, Cairns.

Merimna atrata, **Hope**, Cairns.

Tribe Polycestini.

Sub-Tribe Polycestae.

Castalia bimaculata, **L.**, Cape York.

Tribe Buprestini.

Sub-tribe Buprestes.

Neobuprestis albosparsa, **Cart.**

Nascioides munda, **Oll.**

Nascio simillima, **V. de Poll.**, Cairns.

Bubastes aenea, **Obenb.**, Cape York.
niveiventris, **Obenb.**, Cape York.

obscura, **Obenb.**, Kuranda.

viridicuprea, **Obenb.**

Briseis smaragdifrons, **Obenb.**

Melobasis chrysomelina, **Thery**, Townsville.

incerta, **Kerr**, Cape York.

iridicolor, **Cart.**

macleayi, **Cart.**

purpurascens, **F.**, Cairns.

pusilla, **Cart.**, Bowen.

quadrinotata, **Cart.**, Townsville.

spinosa, **Cart.**, Innisfail.

Diceropygus australis, **Thoms.**, Cape York.

Anilara antiqua, **Thery**, Townsville.

doddi, **Cart.**, Kuranda.

olivia, **Cart.**, Innisfail.

viridula, **Kerr**, Oak Forest.

Notographus deyrollei, **Obenb.**, Cape York.

yorkensis, **Obenb.**, Cape York.

Pseudanilara bicolor, **Cart.**

Tribe Stignoderini.

Sub-tribe Stignoderae.

Calodema plebeja, **Jordan**, Townsville.

regalis, **L. et G.**, Cairns.

wallacei, **Deyr.**, Cape York.

Metaxymorpha gloriosa, **Blkb.**

hauseri, **Thery.**

Themognatha carpentariae, **Blkb.**

franca, **Cart.**

macfarlani, **Waterh.**, Torres Strait.

regia, **Blkb.**

variabilis, **Don.**, Einasleigh.

viridicaudata, **Cart.**, Cairns.

viridicincta, **Waterh.**, Cairns.

Castiarina acuminata, **Kerr.**

alternata, **Lunh.**

aurifera, **Cart.**, Kuranda.

aurolimbata, **Cart.**, Cairns.

dicax, **Obenb.**

doddi, **Cart.**, Kuranda.

erubescens, **Blkb.**

horni, **Kerr**, Cairns.

magnifica, **Blkb.**

octosignata, **Cart.**, Kuranda.

rollei, **Kerr**, Cairns.

seminigra, **Cart.**, Cape York.

titania, **Cart.**, Cooktown.

triguttata, **Mael.**, Innisfail.

venusta, **Cart.**

Sub-Family Chalcophorinae.

Tribe Chalcophorini.

Cyria cincta, **Cart.**, Kuranda.

Cyrioides sexspilota, **Cart.**, Innisfail.

Cyphagastra farinosa, **F.**, Innisfail.

macfarlani, **Waterh.**, Cairns.

pistor, **L. et G.**, Cape York.

Chrysodema aurofoveata, **Guer.**, Cape York.

Preudotaenia frenchi, **Blkb.**

Paracupta aurofoveata, **Saund.**, Cairns.

Chalcotaenia elongata, **Waterh.**

Iridotaenia belliana, **Blkb.**, Kuranda.

The North Queensland Naturalist

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No. 67

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns,
usually on second Monday in March, June, September,
and December, at 8 p.m.

NEXT QUARTERLY MEETING, MONDAY, 8th DECEMBER.

REPORT OF ANNUAL GENERAL MEETING

Monday, 8th September, 1941.

Election of Officers:

President: Dr. H. Flecker.

Vice-Presidents: Miss M. E. Hooper.
Mr. F. R. Morris.

Hon. Secretary and Treasurer: Mr. J.
Wyer.

Hon. Auditor: Mr. R. J. Gorton.

Committee: Officers above ex officio;
also Mr. J. Foster, Miss Jean Whittick.

Resolved that during the currency of
the war, meetings be held quarterly
instead of monthly.

Financial statement and annual re-
port were received and adopted.

New members elected. Miss E.
Goss, Cairns; Mr. J. J. C. Hamilton,
Lands Department, Cairns.

New members proposed: Mrs. Nanki-
vell, Cairns; Mrs. Christiansen, Mt.
Spurgeon; Mr. Derek Scott (Junior
Member), Green Island.

BOOK REVIEW.—17. Principles of Botany for Queensland Farmers. By C. T. White, Government Botanist. Issued by Direction of the Hon. F. W. Bulcock, Minister for Agriculture and Stock, Brisbane, and printed by David Whyte, Government Printer, Brisbane, 232 pp., 103 plates, although written for farmers, the inclusion of the last three words in the title appears to be superfluous for it makes an excellent introduction to

the study of botany for any individual, giving every phase of botany, the illustrations all being drawn from Queensland material, the five parts comprising Morphology, Anatomy, Physiology, Classification and Plant Geography and Ecology. It can certainly be recommended as a valuable aid to those desirous of having a practical botanical knowledge, whether farmers or not.

SPEAR-THROWERS OF THE NORTH QUEENSLAND COAST

(By Keith Kennedy, Primitive Arts and Crafts Museum, Townsville.)

Although the Australian aborigine is famous throughout the world for his use of the boomerang, his chief weapon is not the boomerang but the spear which, on most parts of the continent, is thrown by means of the spear-thrower. Amongst different tribes this implement has different names, but it is known to whites all over Australia by the New South Wales term *womera*.

The spear-thrower is one of the most ancient implements of man, and evidence points to the fact that it was in use prior to the invention of the bow and arrow. Specimens have been unearthed from cave deposits of the Magdalenian period fashioned from horn and bone, and from the cave *Mas d'Azil* in the North of France, some fine examples of which, beautifully carved from reindeer horn in the form of a chamois, grouse and other objects familiar to cave men, have been excavated by archaeologists. (1).

Prehistoric man originally threw his spear by hand, as is still done by some primitive races of the present day. He must have observed that a man with a long arm could throw further than a short-armed man, and some early inventor conceived the idea of lengthening his arm by holding a deer horn or stick with a projection on the end to fit into the butt of the spear, and so the spear-thrower came into being. In Europe the spear-thrower became gradually superseded by the bow and arrow, and is now limited to two areas of the world—parts of the American continent extending into Northern Siberia, and the Australian continent reaching to New Guinea.

In Central America the Aztecs used the spear-thrower under the name of *atlatl*, and further north it was found

amongst the Indians of California. Along the western coast of North America it extended, with gaps to the Eskimo, who made it of bone and horn as did the glacial age Magdalenian cave men.

Two bamboo spear-throwers from the north of New Guinea in my collection (2), are characterised by the fact that, instead of a peg to take the butt of the spear, there is a recess into which the spear end fits; so the spear does not need a depression in its butt as do the Australian spears. However, the spear-thrower is rare in New Guinea, the favourite weapon being the bow and arrow, which spreads northwards across Torres Strait to the tip of Cape York Peninsula and there it comes to a stop, and the spear-thrower in various forms takes its place. Why the Australian aborigine prefers the spear-thrower to the bow and arrow is problematical. It might be that the dry climate of Australia causes wood to become brittle and therefore difficult to keep a bow elastic; or perhaps the open forest of Australia is more suitable to the employment of spears.

In parts of Australia, such as around Brisbane, and extending from Rockhampton to Townsville, no *womeras* were used by the blacks (3), the spear being thrown direct by hand, although in surrounding districts the aborigines had the *womera*. This rather mitigates against the "diffusion of culture" theory, but probably local influences of which we have yet to learn, had something to do with its absence.

Australian *womeras* can be divided into two main groups—those round or sometimes oval in section, like the "tassel," and the milkwood varieties of the Northern Territory, and those

flat in section, to which belong the Queensland, Central Australian and Western Australian forms.

On the North Queensland coast the peg is attached on a plane with the flat surface, and the implement, when projecting a spear, is swung with the edge forward so that it cuts through the air. In other parts of Australia the peg is fixed at an angle to the surface, and the flat side is swung forward. The former method is more scientific as there is less wind resistance. Because of its shape the North Queensland form is a specialised instrument and, except for parrying spears, cannot be used for any other purpose, whereas the broad, slightly concave womerars of Central and Western Australia can be employed as trays for carrying objects on while travelling, and palettes on which to mix red ochre and pipe-clay for adorning implements and the dancers of corroborees.

The North Queensland womera varies in width. One I got at Cooktown many years ago (4), has the following measurements: length 34 ins., width at proximal end $1\frac{1}{8}$ ins., gradually widening to $2\frac{5}{8}$ ins. in the centre, and tapering to $1\frac{1}{8}$ ins. at the distal end. The peg is attached with sinew and gum, and has a notch near the point to facilitate it getting into the depression in the butt of the spear. The proximal end is hafted with two oval sections of Melo shell (5), $4\frac{1}{2}$ ins. in length, gummed together each side of the handle in an upright position.

A narrower womera I collected at Ingham (6), is almost lath shaped, being $1\frac{1}{2}$ ins. at the proximal end widen-

ing only to $1\frac{3}{4}$ ins. in the centre, and tapering to $1\frac{1}{2}$ ins. at the distal end. The peg is not notched, and the shell hafting is absent. Its length is 37 ins. A similar narrow form was also used on the lower Tully River.

A very rare form, the bent or moon-shaped variety, was used only on the Bloomfield River and the strip of country between it and Cape Grafton (7). A specimen in my collection (8) is shaped like a boomerang $29\frac{1}{2}$ ins. in length, with the distal end truncated to take the peg which is attached by strips of lawyer cane (*Calamus* sp.), and gum. The "ballur," as it was called, was employed for spearing fish and birds at close quarters, and is a good example of how an implement can vary from the standard form in a limited area of country. When throwing a spear North Queensland womerars rest between the index and middle fingers, the ring and little fingers grip the handle, while the spear shaft is held by the index finger and thumb; but according to Roth the ballur was held with the blade resting between the thumb and index finger, both of which also held the spear.

It is worthy of note that the spear-thrower is of special interest to ethnologists, as it is the most ancient implement for projecting a missile of which so far any traces have been found. Because of this it has been designated "the first machine invented by man."

REFERENCES.

- (1) Figured by BREUIL and PIETTE.
- (2) Kennedy Ethnological Collection Nos. 225 and 311.
- (3) Roth N.Q. Ethnography, Bull. 13, Records Australian Museum, 1909.
- (4) Kennedy Eth. Coll. No. 29.
- (5) Melo diadema, Lamk.
- (6) Kennedy Eth. Coll. No. 27.
- (7) Roth. N.Q. Ethnography, Bull. 13.
- (8) Kennedy Eth. Coll. No. 28.

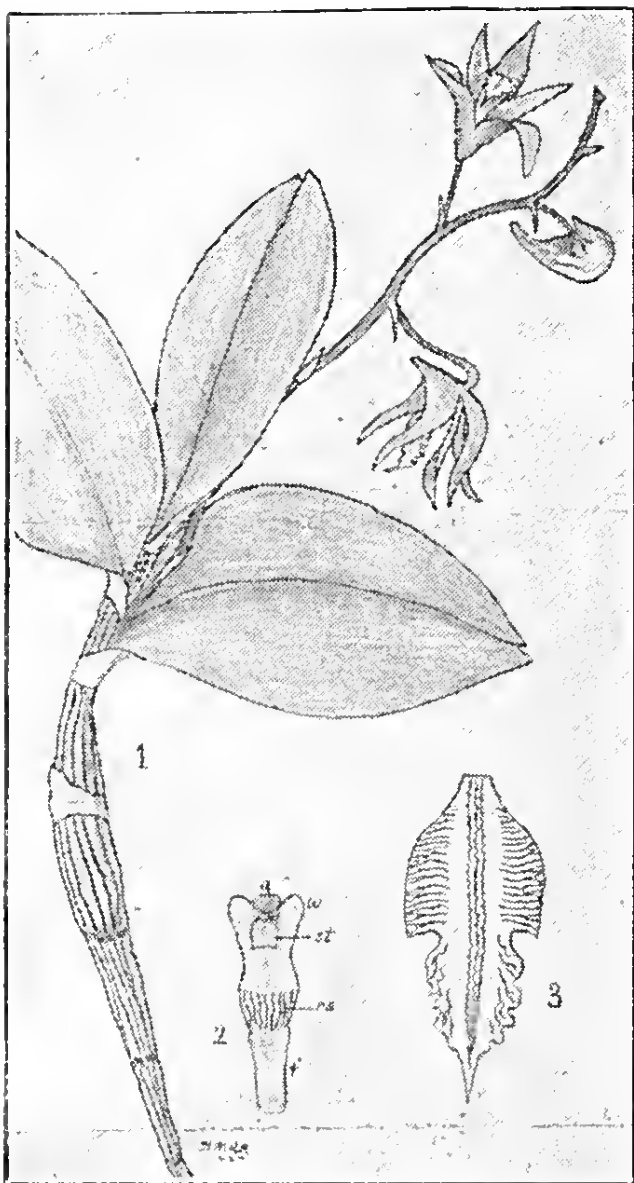
N.B.—The spelling womera was adapted by the Anthropological Society of N.S.W., and the University Anthropological Department, but is also spelt wommerah and wommera. For the sake of uniformity the spelling womera is adopted in this article.

DENDROBIUM WILKIANUM, sp. nov.

(By Rev. H. M. R. Rupp.)

Planta gracilis, in specimini meo ad foliorum bases 9 cm. alta, in medio leviter tumida. Folia 2-3 ad caulis summum, pulla, ovato-lanceolata, 8-9 cm. longo. Racemus floribus paucis, 13 cm. longus. Flores fusci, trans segmenta 4-5 cm. Sepalum dorsale anguste oblongum, vix acutum; sepala lateralalia falcata, ad bases 8 mm. lata, ad apices acuta; petala angusta, acuta leviter

tortilia. Labellum flavoviride lineis rubris prominentibus, 2 cm. longum; lobi laterales incurvi, lati, lineis rubris transversis; lobus medius acutissimus cum marginibus crenulatis crispisque et lineis rubris inecompositis; discus jugis longitudinalibus 3-5, undulatis, fere ad apicem extendentibus. Calcar 7 mm. longum, obtusum. Columna 7 mm. longa, lata, infra striata; alae non anthero altiores.

**KEY TO PLATE.**

1. Stem, leaves, and raceme (about natural size).
2. Enlargement of column; a, anther; w, wing; rs, red striae; f, foot; st., stigma.
3. Enlargement of labellum flattened out, from above.
(The lateral lobes are drawn a little too narrow).

A rather slender plant in general appearance resembling a giant *D. aemulum* R. Br.; stems in my specimen about 9 cm. from the base to the leaves, slightly swollen about the middle. Leaves 2 or 3 at the top of the stem, dark, ovate-lanceolate, about 8-9 cm. long. Raceme few-flowered, 13 cm. long with a few whitish searious bracts. Flowers brown, 4-5 cm. across the perianth. Dorsal sepal narrow-oblong, hardly acute; lateral sepals obliquely falcate, 8 mm. wide at the base, acute; petals narrow, especially at the base, acute, slightly twisted. Labellum yellowish-green with conspicuous deep-red lines, 2 cm. long; lateral lobes broad, incurved, with numerous fine transverse red lines; mid-lobe very acute, with crenulate-cripsed margins and irregularly-curved red lines; disc with 3-5 longitudinal ridges or plaits, which are minutely undulate and extend almost to the tip before coalescing. Spur 7 mm. long, obtuse. Column as long as the spur, broad, striate below; wings not higher than the anther.

Babinda, North Queensland, J. H. Wilkie, 10/1941.

The flowers suggest affinities with *D. undulatum* R. Br. and with *D. fuscum* Fitzg., but the plant itself is very different from either of these. The labellum is at least twice as broad as that of *D. fuscum* according to Fitzgerald's description in the *Gardener's Chronicle*, Nov. 1879, and the mid-lobe about four times as long.

North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. X.

CAIRNS, 1st MARCH, 1942

No. 68.

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Girls' and Infants' School, Abbott Street, Cairns, usually on second Monday in March, June, September, and December, at 8 p.m.

NEXT QUARTERLY MEETING, MONDAY, 8th JUNE.

REPORT OF MEETINGS

Monday, 8th December, 1941.

New members elected: Mrs. Nankivell, Cairns; Mrs. Christiansen, Mt. Spurgeon; Mr. Derek Scott, Green Island.

BOOK REVIEWS.—18. *Furred Animals of Australia*. By Ellis Troughton, C.M.Z.S., Curator of Mammals, Australian Museum, Sydney, with 170 illustrations in natural colour by Neville W. Cayley, F.R.Z.S. Published by Angus and Robertson Ltd., Sydney and London, 374 pp. By far the best book yet published on this subject for popular use, giving much useful and accurate information. It is unfortunate that the name *Echidna* has been suppressed in favour of *Australian Spiny Ant-eater*. The ant-eaters are already well known as the South American sloths, a totally different class of mammals, and although it may be pleaded that the name *Echidna* has already been be-

Monday, 9th March, 1942.

Lecture by Mr. H. D. Wibley, Senior Examiner, Inspection Branch, Munitions Branch, entitled "Flying Timbers."

New members proposed: Dr. Flynn, Innisfail; Mrs. Cuzner, "Bellenden," Lower Tully.

stowed upon an eel, yet the popular name platypus has been retained despite the fact that a genus of insects is also known by this name.

19.—**Victorian Fungi**. A Key and Descriptive Notes to 120 different Toadstools (Family Agaricaceae), with remarks on several other families of the Higher Fungi. By James H. Willis, B.Sc., of the National Herbarium of Victoria, 72 pp., 18 figures, and 16 full page plates, some coloured. A most interesting introduction to a very difficult subject. The F. N. Club of Victoria is to be congratulated on its excellence, which should certainly stimulate a more general study of this group.

DENDROBIUM QUADRILOBUM Rolfe ?

By THE REV. H. M. R. RUPP.

Recently I received, through the courtesy of the Brisbane Herbarium officers, a specimen of a *Dendrobium* obtained by Mr. Keith Kennedy, of Townsville, near Paluma, about 65 miles north of that city. The material was dried, but in a good state of preservation. It aroused my immediate interest because of its resemblance to a group

of New Guinea *Dendrobs* with which I had been dealing not long before at the National Herbarium in Sydney. These plants belong to a section of the genus not hitherto known in Australia, named *Cuthbertsonia*, of which Mueller's *D. Cuthbertsonii* may be called the type. They are very small plants, mostly monophyllous, with one

or a few flowers to each little pseudobulb, the flowers being large relatively to the size of the plant. I could not match Mr. Kennedy's plant with any of the New Guinea species, though affinities were fairly obvious in one or two cases. As it was certainly not identical with any hitherto-described Australian forms, I came to the conclusion that it was probably new. Casting about for a suitable specific name, "quadrilobum" appealed to me in view of the doubly-lobed labellum; but upon consulting the Kew Index I found that this name had been appropriated in 1896 by Rolfe, to describe a species (in Kew Bull. 1896, p. 44), which, he says, was received from Australia, but probably came from New Guinea or one of the islands near by. Rolfe's description fits Mr. Kennedy's plant very well except in two or three details, and it may be that living flowers from the Paluma orchid might dispel these few discrepancies, for I did not care to submit the only two flowers available to dissection. But Rolfe places his plant in the section *Cadetia*, which since 1896 has been restored to the generic rank it originally had. The Paluma plant fits in with *Cadetia* pretty well so far as pseudobulb and leaf are concerned; but the flowers are quite definitely those of a *Dendrobium* as distinct from a *Cadetia*, and in my opinion this species belongs to *Cuthbertsonia*, within the former genus. I should prefer to postpone any

definite expression of opinion as to its identity with Rolfe's *D. quadrilobum* until further material, with living flowers, is available for examination. In order that readers may keep a lookout for this plant, I append a short description: A small epiphyte on Casuarina trees in open forest country. Pseudobulbs 2-3 cm long, tapering towards the top. Leaf solitary, linear-lanceolate, as long as or longer than the pseudobulb. Flowers 2 to a pseudobulb in the specimens found at Paluma, on pedicels about 16 mm long, yellowish. Sepals about 14 mm long, lanceolate; petals similar, hardly as long. Labellum nearly 20 cm long when extended; lateral lobes from well above the base, broad but acute; mid-lobe large, conspicuously expanding into two terminal lobes larger than the lateral lobes of the disc. Longitudinal ridges or raised lines of the disc obscure in the dry flowers, but apparently 2. Column apparently very short and broad. Spur large, very blunt. Capsule cylindrical-oblong, half as long as the pseudobulb.

Whether this may ultimately prove to be a new species or not, it is, if I am correct in believing it to belong to the section *Cuthbertsonia*, undoubtedly the first representative of that group to be definitely recorded within Australia, and Mr. Kennedy is to be congratulated on his discovery.

An Interesting Addition to the *DENDROBIUM SPECIES (Orchidaceae) of Queensland (North)*

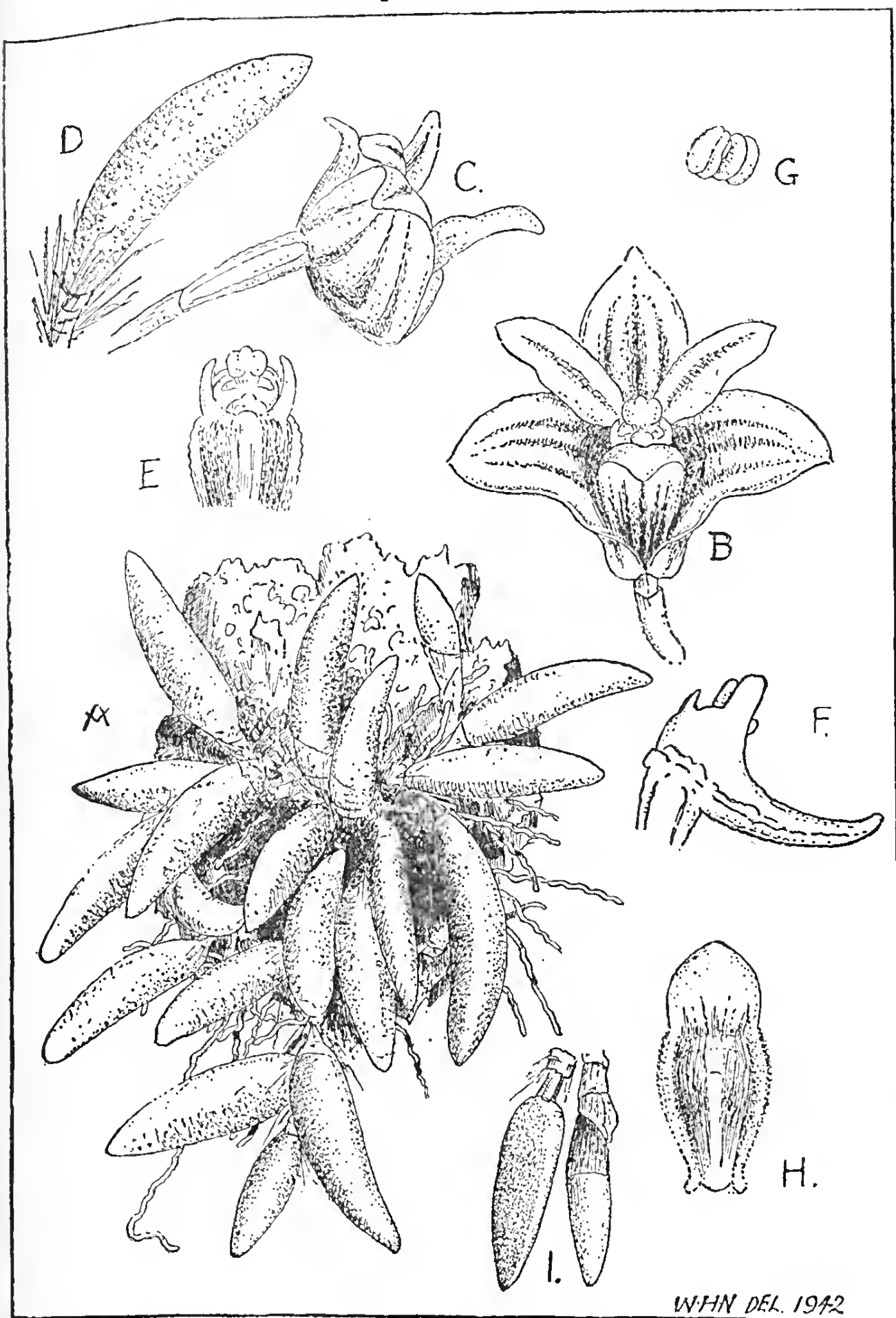
(By W. H. Nicholls, Melbourne.) (Communicated by Dr. H. Flecker.)

DENDROBIUM AURANTIACO-PURPUREUM, sp. nov.

Planta parvissima, Rhizomata curta, repentia, Folium ovato-oblongum, complanatum, 1-3 cm. longum, Inflorescentia uniflora, 7mm. diametro, parva, purpurea, Valde purpureo-striata; pedicello brevissimo. Perianthi-segmenta patentia; calcar obtusum; Sepalum-dorsale late lanceolatum; sepala-lateralia, late obtusa, Petala breviora ac angustiora sepalorum. Labellum aurantiacum; apice lato-obtusum, obscure trilobatum; Marginibus pubescentibus; lobus intermedius latus obtusus. Columna curtissima; lobis prominentibus obtusis.

Rhizomes short and dense on the bark

of trees. Leaves thick fleshy 1.3 cm. long, ovato-oblong, laterally compressed, obtuse, marked with foveolar dots. Flower solitary, small, on very short pedicels, about 7mm. in diameter, widely-expanding, purple with deep purple nerves. Dorsal sepal broad-lanceolar; lateral sepals oblong-lanceolar, wide and obtuse, spur short and blunt. Petals shorter than the sepals and about half as wide. Labellum obovate-oblong, thick, about as long as the sepals, attached to the basal projection of column, tip broad and obtuse, orange marked with some red; lateral lobes



Key to figures (*Dendrobium aurantiaco-purpureum*, sp. nov.).

- A. Typical plant.
- B. Flower front.
- C. Flower side.
- D. Leaf, showing remains of fibrous sheaths.
- E. Head of column, front.
- F. Column from side (anther removed).

- G. Pollen masses.
- H. Labellum from above.
- I. Leaves (left) mature leaf shewing petiole; (right) young leaf with sheathing scales. (Figure A. about natural size.)

obscure, margins pubescent to the base, Column very short, the wings prominent erect and obtuse. Habitat:—Burdekin River, Mt. Fox (via Ingham), Coll. A. Glindeman.

FitzGerald's material was collected "on rocks and stones, Seaview Range, Rockingham Bay." He shows the flowers as somewhat pale coloured, whereas those of the Mt. Fox plant were all brightly-coloured, their beauty far exceeding those of *D. variabile* and allied forms.

The new species can only be (with certainty) differentiated from its closest ally. (*D. variabile*, Nicholls) when the plant is in flower. The blooms of *D. aurantiaeo-purpureum* are purplish with an orange-red labellum, widely expanding, the pedicels short; those of *D. variabile* are white with pink (or red) striae, the labellum orange, not widely-expanding, the pedicels extended. Other differences there are, but these will be discerned from a perusal

of the respective descriptions and the figures of both species (1).

As previously inferred the plants of both forms are similar, though perhaps the leaves of the sp. nov. are more consistently shorter and of a lighter green.

The figure given by R. D. FitzGerald (under *Bulbophyllum liehenastrum*, F. Muell) in his monumental work "Australian Orchids" (2) appears to coincide with *D. aurantiaeo-purpureum*, more so, than with *D. variabile*, as stated in this journal previously (3). *D. variabile* is also found in the Mt. Fox district.

In this journal (3) P.2 the leaves of *D. variabile* are given as 1.3-1.7 cm. long, they are now known to exceed 3 cm. in length.

The Author's plant (sp. nov.) flowered in Melbourne (Vic.) during December (1941).

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- (1) This issue et of Sept. (1938) vii. p.3.
(2) Vol. 2, part 5.
(3) N. Q'land Nat't (Dec., 1938), vii, p.2.

A SUPPLEMENTARY NOTE ON DENDROBIUM WILKIANUM

(By the Rev. H. M. R. RUPP, Northbridge, N.S.W.)

Since my description of this species in this journal (Dec., 1941), my attention has been called to a raceme sent by Messrs. G. Bates, of Cairns, and Kerns, of Cucania, in September, 1934: Mr. Bates having expressed the view that the *Dendrobium* from which this raceme was taken was identical with Mr. Wilkie's plant. I have looked up the raceme in question amongst the undetermined specimens in my herbarium, and I find it was forwarded by Mr. Bates at the time mentioned above. It is labelled "*Dendrobium*, sp. ign. (cult.); G. Bates, Cairns." I have not now the correspondence which concerns it; and to be frank, I had forgotten its existence. As far as my recollection goes, at the time I asked Mr. C. T. White if he thought it might be FitzGerald's *D. fuscum*, which I knew only by hearsay; and I am fairly certain that Mr. White's reply was in the negative. After softening and dissecting a flower from the raceme, I am satisfied that Mr. Bates' opinion is correct. In 1934, when I was living in the country and had scanty access to the orchid literature and specimens which I can now consult

at the National Herbarium in Sydney, I was very shy of declaring "new" any North Queensland orchid unless I had the backing of someone more experienced than myself in the N.Q. flora. As I heard nothing more of the raceme alluded to, it simply went to rest among my undetermined species. I have no doubt now that the flower is identical with that of *D. Wilkianum*. Mr. Wilkie, however, was the first to send down a living plant of this *Dendrobium*, with a small raceme *in situ*; and examination of the whole plant soon satisfied me, after due comparison with allied forms, that it was an undescribed species. I feel sure that Mr. Wilkie will not grudge Messrs. Bates and Kerns priority of actual discovery, and that they for their part will gladly acquiesce in the name bestowed upon the species.

N.B.—In the last issue of this journal, the plate of *Dendrobium Wilkianum* was reduced to about half natural size, but a statement of this reduction was omitted in the Key.

H.M.R.R.

The North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vov. XI.

CAIRNS, 1st SEPTEMBER, 1943.

No. 69

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Cairns Public School, Abbott Street, Cairns,
usually on second Monday in March, June, September,
and December, at 8 p.m.

ANNUAL GENERAL MEETING, MONDAY, 20th SEPTEMBER, 1943.

BUSINESS: Election of Officers, etc.

BOOK REVIEWS.

20.—**Emergency Food Plants and Poisonous Plants of the Islands of the Pacific.** Written by Dr. E. D. Merrill, Administrator of Botanical Collections and Director of the Arnold Arboretum and published by order of the Secretary of War, U.S.A., for the information and guidance of all concerned. This Technical Manual, TM 10—420, is dated 15th April, 1943, and gives in 149 pages an account of the various foodstuffs found in the Pacific, each plant being given its vernacular and botanical names, as well as the various native names, being illustrated by 113 simple and easily recognisable hand drawings. As a great many of the plants are also found in North Queensland it will be found of great value to all troops and civilians, who may at some time or other be in a position to have to subsidise in an emergency an ordinary food ration. A good index is very helpful.

21.—**Friendly Fruits and Vegetables.** Prepared by the General Staff L.H.Q. Australia and issued under the authority of the Commander of the Allied Land Forces S.W.P.A. Notified in G.O.'s dated 31st May, 1943, 71 pp., 37 illustrations, several being in colour. Most of the plants described

are native to Australia as well as to the islands to the north. Under the heading of the vernacular name of the plant together with its "pidgin" and Motu equivalent, the plants are described, but in the absence of botanical names—in many cases these are not at all easy to recognise with certainty. Moreover, the absence of an index detracts from the value of the pamphlet.

22.—**A Doctor in Paradise.** By S. M. Lambert, M.D., 421 pp., 24 full page photographic illustrations, published by Geo. Jaboor, Melbourne, for J. M. Dent and Sons Ltd., London, treats of the author's experiences on account of the Rockefeller Foundation, particularly of treatment of the hookworm disease in Papua, Fiji, Gilbert and Ellice Islands, Tonga, Samoa, New Hebrides, Cook Islands and Solomon Islands, of his first treatment with carbon tetrachloride, and of his efforts—ultimately crowned with success of providing a school for the training of native medical practitioners. It provides not only much interesting information concerning the natives and especially of hookworm disease, but it possesses a charm and humour that is particularly appealing and entertaining.

DENDROBIUM DICUPHIUM F. Muell.

By the Rev. H. M. R. Rupp, Northbridge, N.S.W.

Bentham describes this tropical orchid as having stems strongly ridged and furrowed, "sometimes 3 to 4 inches long"; but it must be remembered that he worked on dried material only, and a limited supply of that. As a matter of fact, in the fresh state the plant resembles a very stout and well-nourished *D. Phalaenopsis*, with similar leaves, and the stems vary from a few inches to over a foot in height. The "furrows" are very shallow, but doubtless would be deepened in starved or dried specimens. The racemes are normally terminal; but a plant received by Dr. H. Flecker from Groote Island, and sent to me a few years ago, has just come into bloom for the first time, and the single raceme has developed a small aerial growth on the side of the tallest stem. It is nearly a foot long, and has nine flowers.

It is not a showy species. The flowers are small, the sepals and petals being about half an inch long, or a trifle more. All segments are approximately equal in length, but the petals are very much broader than the sepals. The colour is a very pale green outside; inside cream, with the lower part of the labellum, and its lateral lobes, stained a rich maroon. The labellum is very acute and somewhat reflexed at the tip; its disk is ornamented with three longitudinal fringed or crested ridges. The lateral sepals form the usual pouch at their base, but also have a rather deep hollow obtuse spur below this, so that the flower is two-spurred as in *D. bigibbum*. Bentham gives as the localities of the specimens he examined, the Liverpool River and Port Darwin; but in all probability the species extends into Queensland at least in the Cape York Peninsula.

RECORDS OF TWO SAWFLIES.

(Hymenoptera, Tenthredinidae)

By Maurice F. Leask, Memb. F.N.C.V.; Memb. Anthr. Soc., Vic.

Collecting in the field in new localities has yielded some interesting details concerning sawflies, belonging to the *Tenthredinidae*.

The first capture is noteworthy as it supplies evidence of the extended range of one of these insects. On 24-XII-42 two specimens were taken together on low scrub growing on the crest of the Astrolabe Range, Papua, at an altitude of 2,500 feet. These two were adults, identified by Mr. H. Hacker (Queensland Museum) as a *Platypsectra* coming very close to *P. leachi* Kirby, a Queensland insect. Indeed Mr. Hacker has been unable to separate it from that insect, and advises me that the capture is of great interest, as this sawfly has not been previously recorded outside Queensland.

The second specimen taken drew my attention as the larvae were feeding on a food-plant new in my experience. In Victoria, personal observations during the breeding of sawflies up to Specimen

No. 150 (1) showed the food-plant to be some species of *Eucalyptus* only.

Towards the end of May, 1943, several larvae were observed in the Herberton district (North Queensland) to be feeding on one of the "native raspberries." From the description supplied by the North Queensland Naturalists' Club, the plant is obviously *Rubus rosaefolius*, with leaves like those of a rose.

Fortunately one of the adults was taken on a leaf adjacent to some of the larvae. Mr. H. A. Longman, of the Queensland Museum, states that the larvae and adult are identical with specimens named as *Philomastix nancarrowi* Froggatt. He adds that Dr. A. J. Turner kindly informs him that this species (or a closely allied one) feeds on a wild *Rubus* in the McPherson Range, S.E.Q.

The specimens described herein are retained by the Queensland Museum, and I am indebted to that institution for valuable assistance in determinations.

(1) This is the form of designation used (Natural History), London.

in reports to the British Museum



DENDROBIUM DICUPITUM Agnell

KEY TO FIGURES.

- A. Typical Pseudo-bulbs with raceme of blooms.
- B. Column Head from side. Anther removed.
- C. Callous ridges Labellum Mid-lobe.

THE BRUSH TURKEY.

By Leslie Pearson, age 9 years.

One day when I was in the scrub, I found a turkey's nest. I began to dig into the heap of rotted leaves.

After digging down about three feet, I came across two young turkeys. Thinking that there might be more young birds, I continued to search amongst the leaves.

A few minutes later I found another young turkey. I put these three young birds into a bag to take them home. I put them in a coop and twice a day I fed them on scraps, wheat and the like.

The father bird scratches up a heap of dry leaves, and on a wet day opens it up to let the rain in. Then he covers the nest over again. When the mother bird is ready to lay an egg, the father bird opens up the nest again.

The father bird takes about three weeks to make the nest.

The brush turkey lays about twelve eggs in a season. If anybody interferes with the nest, the father bird covers the nest up again so that the eggs will keep warm.

When the chicken comes out of the egg, it is covered with down, like any other chicken, but it feathers quickly and works its way out of the nest.

It can fly as soon as it comes out of the nest.

The nest is very hot inside and it takes about three weeks to heat sufficiently to hatch the eggs.

The nest is full of leeches and ticks, grubs and other insects, and I think that the young turkey feeds on them.

The chickens have protectors over their eyes; this is a sort of skin which covers their eyes, and keeps the dirt out.

These birds which I brought to Cairns are now four months old and half grown, and are out at the Zoo at Edge Hill in the care of Mr. Les. Wright.

In three days' time the chickens' wing and tail feathers had grown

enough to enable them to fly, although the rest of their bodies were still covered with down.

Cairns, 3rd May, 1943.

Neville W. Cayley in "What Bird is That?" describes (p. 38) the nest as "A large mound of earth, leaves, and sticks and debris raked together from the surrounding surface of the ground. These natural incubators vary in size according to age or to the number of birds occupying them; a new mound usually measures from 7 to 10 feet in diameter, by about 3 feet in height; an old one may measure as much as 30 feet in diameter by six feet in height. Nesting mounds are repaired (scratched over) and added to each breeding season. The eggs are deposited on end (the larger end uppermost) in holes about 18 inches to two feet deep, and are then covered over. The young are fully fledged when hatched, and fight their way out of the mound unassisted."

The Secretary,
Naturalists' Club,
Cairns.

Dear Sir,—

I have in my possession photos taken by myself of a brush turkey chick, which I hatched under a domestic hen (a common practice years ago). One photo was taken within two hours after hatching and another twenty-four hours later. These two photos are close-up and support "Leslie's" view that the wing feathers develop quickly after hatching. Chicks are very active when hatched, and within an hour, allowing for the chick to dry, they can run and flutter, that it is difficult to catch them if there is any cover or brush about. They can fly short distances on the second day.

S. J. FRENCH,
Cairns.

19th June, 1943.

The North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. XI.

CAIRNS, 1st MARCH, 1944.

No. 70

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Cairns Public School, Abbott Street, Cairns,
usually on second Monday in March, June, September,
and December, at 8 p.m.

NEXT MONTHLY MEETING, MONDAY, 13th MARCH, 1944.

BUSINESS : General.

MEETINGS OF CLUB.

Monday, 27th September, 1943, Annual General Meeting, Election of Officers, Balance Sheet.

Monday, 13th December, 1943, Demonstration of Preparation of Crustacea by Corporal Alfred Read, D.C.R.E.

ENEMIES OF SAWFLIES

(Hymenoptera.

Tenthredinidae.)

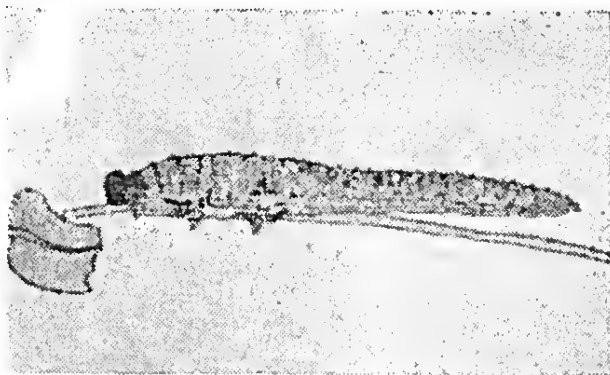
(By MAURICE F. LEASK, Memb. F.N.S.V.; Memb. Anthr. Soc., Vic.)

The larvae of these insects may be exposed, or in galls, or in leaf-mines. Enemies can more readily reach the exposed feeders.

It is doubtful whether birds attack the repulsive-looking sawfly larvae. Thus, it is not certain that peculiar habits of the grubs, as when small pink ones shelter within a cluster of large black ones, are designed as protection from birds. The larvae are probably evil-tasting to birds; it is not a disadvantage, then, for them to be so conspicuous. Details of attacks on larvae by birds would be welcomed.

Records show that a particular genus of bugs noted for being carnivorous definitely attack live sawfly larvae. *Cuspieoma* sp. (1) belonging to the family PENTATOMIDAE, the Stink or Shield Bugs, was found sucking the blood of a dead *Perga* larva at White Horse (Vic.). A large number of sawfly grubs are nocturnal feeders, but those under observation which scattered by day to feed in the rain may have been attempting to avoid such enemies.

(1) Identified by the Department of Agriculture, Victoria.



A Typical *Perga* Structure.

19/2/38 Actual length, 3.15 c.m. (x2).

Insect parasites take comparatively heavy toll. One finds that insects generally have no effective method of combating parasites—the parasite always wins, which is fortunate. Even the most highly evolved Aculeates are fools when it comes to dodging parasites. Besides BRACONIDS, the TACHINIDS (2) are a large group

(2) Based on "Observations on Sawflies of the Genus *Perga*, with notes on Some Reared Primary Parasites of the Families Trigonalidae, Ichneumonidae, and Tachinidae," by Janet W. Ratf, Proc. Roy. Soc., Victoria, Vol XLVII (New. Ser.), Pt. 1.

of DIPTERA resembling "blow-flies," mostly parasitic on the larvae of other insects.

In one of my experiments, two TACHINIDS emerged from one sawfly larva; this is not unusual, and depends on the size of the host.

The following table shows the relative order of emergence of some typical imagos. (1)

Experiment No. 62 :

Pupated 9/1/39.

28/10/39, two sawflies, females.

2/11/39, one sawfly, female.

3/11/39, one sawfly, male.

14/11/39, one parasite, Tachinid.

Experiment No. 17 (*Pseudoperga* sp.) :

Pupated 4/2/38.

25/12/23, one parasite, Tachinid.

5/1/39, two parasites, Tachinids.

13/11/39, one sawfly, female.

19/11/39, one sawfly, male.

An indication of the extent of parasitization is given in results of experiments as follow :—

Experiment No.	Original Number of Larvae	IMAGOS			
		Sawflies		Parasites	
		Males	Females	Diptera	Hymenoptera
9	15	—	—	—	1
13	12	—	—	2	—
17	28	1	1	3	—
24	31	—	1	1x1	2
27	3	2	1	—	—
108	33	2	29	—	—
	122	5	32	7	3

SAWFLIES IN THE FIELD

(Hymenoptera, Tenthredinidae)

(By MAURICE F. LEASK, Memb. F.N.C.V.; Memb. Anthr. Soc. Vic.)

There is a large group of Australian sawflies belonging to the sub-family Euryinae, probably frequenting tea-trees, of which no larvae are yet known. Most of the larvae of the species of *Perga*, which is a large genus, have never been described.

In the course of my observations in the Central Victorian bush throughout the year it was quite noticeable that larvae made a sudden appearance in that area on approximately the first day of June. Numerous larvae of different species are in the feeding stage in February, but they, together with species bridging the gap by feeding in late autumn are in the minority, and it seems definite that a certain big group, the Pergidae, are to be found on the leaves from June to December.

The immature stages of these insects, in a vast majority of cases, favour EUCALPT "suckers" rather than mature trees, though they occur equally on suckers in hill and gully sites. Those with day-feeding habits predominate. *Platypsectra cyaneus*, when very young, eats the surface off the leaves, leaving a lace-like network of veins. Many species of larvae spread out in twos and threes, side by side on the leaves. Some rap with their abdomens even when alone, and are prone to drop off when touched.

One cluster found on *Eucalyptus australiana* (2) held the record for longevity, being under observation for seven months and two days.

It was equally noticeable that large numbers of the grubs disappeared from the leaves in December. Not all species pupate "en masse"; one individual was observed singly to bore into the earth with a spiral motion. It seems very common for the Australian Pergas to remain up to three years in pupal stage before emerging. Usually they burst out of the soil straight to freedom; in one case five adult insects came out of the same hole.

One or other of the adults is abroad at any given time of the year except, perhaps, in June. Among the more notable captures were one female of *Pseudoperga guerinii*, 24/2/40, on *Eucalyptus* sp., and two females of *Perga* sp. on 24/2/40. It was somewhat unusual in sawfly collecting to take. On 22/3/40, five adults in the morning at Glen Park (Vic.) and four adults in the afternoon at White Horse (Vic.). All nine were females of the same species, *Perga* sp. Of these, one flew, while the others permitted themselves to be picked from the leaves.

(2) Identified by an officer of the Forests Commission of Victoria.

(1) Experiments by Leask.

PLAYGROUND OF TOOTH-BILLED BOWER-BIRD

(*Scenopoeetes denti-rostris*)

(By MAURICE F. LEASK, Memb. F.N.C.V.)

These notes are prepared with Cayley's "What Bird is That?" on hand, and are intended as an elucidation of the description therein.

On 14th November, 1943, at 2 p.m., we were following a disused jungle path about a mile east of Lake Eacham, on the Atherton Tablelands of North Queensland. Continued bird calls attracted our attention. They came from a spot 30 yards off the track, and resembled parrot's cries, varied and tending to warbling. The bird was located close to the ground, and identified as the TOOTH - BILLED BOWER-BIRD.

Compared with book-plate the bird was more distinctly speckled underneath and more strongly, sheeny brown on the upper side. At the spot where the bird was first located was a cleared patch of earth, with no green leaves thereon, and situated beside a mass of lawyer cane forming loops two feet high. It is probable that the bird perched on these loops at intervals; the absence of green leaves indicates that this specimen was just beginning its mating activities.

Half a mile to the east, near the top of a slope in the middle of dense scrub a second bird was heard emitting similar notes. It, too, was close to the ground. On flushing, it flew a short distance only, and was seen to be identical with the former. At the spot from which it rose was a cleared patch of earth about 3ft. by 4ft., and on this were a dozen fresh leaves all apparently similar. This cleared spot, under a Scrub Pandanus, was made between six tiny growing saplings two feet high, with stems $\frac{1}{2}$ -inch in thickness. The birds may pass between these stems in their gambols.

On 23rd November, 1943, we paid a second visit to the same locality at 7 p.m. in the last hour of daylight for the

express purpose of guiding Capt. J. A. Marshall to the playgrounds. At the first spot the bird was repeatedly twittering, rather like the imitation of a parrakeet. When Capt. Marshall made a sucking sound, a pair of birds responded by flying excitedly nearer and making a call similar to his.

The cleared space had over a dozen leaves on it, placed underside uppermost, i.e., whitish side up. They are said to be similar to the leaves used in the Cape York area, namely *Litsea* leaves (1). *Litsea* is a Brown Bollywood of the family Lauraceae, occurring at intervals in the fringing jungle from Eungella to Cairns and possibly further north. (Swain.)

One of the leaves under examination was very fresh, being much whiter; all gave the impression of being pressed to earth, as though by the bird's feet.

The second playground was revisited; it was indicated by the bird calling in a twitter as abovementioned. The cleared space had about twelve fresh leaves arranged on it. Scratchings on the "circus-ring" were made, probably, by bandicoots. A pair of birds responded in the same way as at Site 1, to Capt. Marshall's sucking sound.

In conclusion, it will be noted that no description of the display can yet be given. There appears to be an extended range of the Tooth-billed Bower-bird to Lake Eacham on the West and Cape York Peninsula on the north. A discrepancy may occur in naming the species of leaves or in Swain's range of the *Litsea*.

It is expected that further more scientific records of this bird will be given by Capt. Marshall in due course.

(1) The leaf is probably that of *Litsea dealbata*.—H.F.

EDIBLE PLANTS OF NORTH QUEENSLAND.

By H. FLECKER.

As at the present time, numerous army units in North Queensland are being instructed on "how to live on the land," a list of food plants found in North Queensland has been prepared. Those listed are specific, and where these are available, the vernacular names are given in addition to the botanical, those established as a standard by the Committee of Scientific and Industrial Research being adopted even in preference to those better known, thus the *Sarcocephalus cordatus*, al-

though very well known in these parts as the Leichhardt Tree, is listed under the name of Cheesewood as given in Trade Circular No. 47, "Nomenclature of Australian Timbers." The aim is to catalogue as far as possible the known edible plants with brief indications of which part is to be eaten and how prepared if necessary. A few introduced plants, including strays from cultivation, are also included. It is hoped that this list will form a foundation for further work in this direction.

NYMPHAEACEAE :

1. *Nelumbium speciosum* Willd, Sacred Lotus.
Large seeds boiled or roasted. Excellent.
Large roots may be cooked and eaten.
2. *Nymphaea gigantea* Hook. Large Blue Water Lily.
Rhizome and seeds eaten.
Stalks of unexpanded flowers, broken and deprived of fibrous parts, eaten by natives (Thozet, Palmer).

MYRISTICACEAE :

3. *Myristica cinnamomum* R. Br., Queensland Nutmeg.
Although fruit smaller, "maec" and "nut" indistinguishable by taste from *M. fragrans*, the nutmeg of commerce.

ANNONACEAE :

4. *Annona squamosa* L., Sweet Sop. Native origin uncertain.
Fruit eaten raw. Excellent flavour.
5. *A. muricata* L., Sour Sop. Native of Tropical America.
Fruit eaten raw. Well flavoured.
6. *A. reticulata* L., Custard Apple. Native of Tropical America.
Fruit eaten raw. Well flavoured.
7. *Melodorum Leichhardtii* Benth., Merangara.
Fruit eaten by natives (Thozet).

LAURACEAE :

8. *Beilschmiedia Bancroftii* (Bail.), White et Francis. Yellow Walnut.
Fruit eaten after being roasted, beaten up, and steeped in running water. (Bailey.)
9. *Endiandra Palmerstonii* (Bail.) White. Queensland Walnut.
Fruit eaten after being roasted, beaten up and steeped in running water. (Bailey.)
10. *E. insignis* (Bail.), Boomban.
Kernel of nut eaten after similar preparation to the above. (Bailey.)
11. *E. tooram* Bail., Tooram.
Fruit eaten by natives (J. F. Bailey).

MENISPERMACEAE :

12. *Limacia esiangkara* (Bail.), Esiangkara.
Roots eaten after being roasted.

CAPPARIDACEAE :

13. *Capparis lasiantha* R. Br., Nipang.
Fruit. Pulp eaten by natives. (Palmer.)
14. *C. nummularia* DC., Longulla.
Fruit eaten by natives. (Bailey.)
15. *C. canescens* Banks, Native Pomegranate.
Fruit eaten by natives. (Thozet.)

(To be Continued.)

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The Journal and Magazine of the North Queensland Naturalists' Club.

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CAIRNS, 1st JUNE, 1944.

No. 71

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Cairns Public School, Abbott Street, Cairns,
usually on second Monday in March, June, September,
and December, at 8 p.m.

NEXT MONTHLY MEETING, MONDAY, 12th JUNE, 1944.

BUSINESS : General.

MEETINGS OF CLUB.

Monday, 13th March, 1944, General
discussions on Control of Bush Fires,
Building of N.Q. Museum, Presenta-
tion of two cases of mounted N.Q.

Birds, proposed presentation of Mr.
Fenby's property at Clump Point, list
of 238 species of edible plants in N.Q.,
exhibition of specimens, etc.

ELECTION OF MEMBERS.

27th September, 1943 : Dr. Flynn,
Innisfail; Mr. F. P. Dodd, C.S.I.R.,
Melbourne.

13th December, 1943 : Cpl. A. A.

Read, 55 Grove Street, Cairns; J.
Dickson, 25 Spence Street, Cairns;
Harold Woodlands, Box 989H., Adel-
aide; Miss Jean Devanny, Cairns.

BARK CLOTH OF THE N.Q. ABORIGINES

(By KEITH KENNEDY, Musical Instrument Museum, Townsville.)

Although known in Africa and America, the art of making cloth from the bast of certain trees reaches its greatest perfection in the Pacific region. This art, practised by the Papuasians, Polynesians, Melanesians and Negritos, extended to the Australian main-land in the Cairns district, where, until recently, bark cloth was made by the comparatively small, curly haired people of the rain forests. The Australian cloth is plain, and not decorated with artistic motifs, as can be seen on Pacific Island specimens, but the method of manufacture is fundamentally the same. It is now extremely rare, and whenever found should be acquired by museums. A bast blanket in my collection (1) is nut-brown in colour, and measures 5 ft. x 2 ft. 11 inches. The manner of making them was as follows : A sheet of bark was taken from a forest tree,

usually *Ficus pleurocarpus*, the hard outer surface peeled off, and the soft inner bast beaten all over with a wooden bat-shaped beater, until it became soft and pliable. It was then folded and again beaten, this procedure being repeated several times until the cloth became folded into a small parcel about a foot long—a size convenient for carrying the blanket when not in use. A more detailed description of the above process is given by Roth (2).

On most Pacific islands where it is difficult to get large enough trees, the cloth is made, not from one sheet of bark, but from several strips beaten and joined together. This is observed in Fiji where the bark of the *malo* tree *Broussonetia papyrifera* is used, and the cloth is called *masi*. On Polynesian islands it is known as *tapa*.

The presence of bast cloth on the

(1) No. 211. Kennedy Collection.

(2) Roth, N.Q. Eth., Bull. 15. 1910.

Australian coast points to a definite culture contact with the islands to the north and north-east, and supports the school of thought that considers that the Australian aborigine was the first comer to this continent, and that later—a negrito people came from the north or north-east, and coasted south until they reached Tasmania, where they became the ancestors of the now extinct Tasmanians (3). This thesis was strengthened by the expedition of the Anthropological Society of New South Wales, which excavated a rock-shelter near Lake Burvill, Illawarra District, N.S.W., where tasmanoid lithic artifacts were found in the upper deposits, and Australian forms in the lower (4).

After their expedition to North Queensland (5), Tindale and Birdsell favoured the view that the modified negritos of the Cairns hinterland and

the Tasmanians represent part of a wave of people who entered the continent at an early date, and were followed by the ancestors of the present day aborigines. If this were the case artifacts of Tasmanian form would be found all over Australia, whereas to date, in spite of the efforts of many collectors, they have only been discovered on isolated parts of the eastern coast.

At present there is no definite evidence that the Cairns tribes and the Tasmanians were related, at least culturally, for their material culture was entirely different in character. For instance, the Tasmanians, even in the wet forest areas, did not make bark blankets, but wore skins; and the North Queensland implements, both wooden and lithic, while differing considerably from the Australian, also differ from those once used by the Tasmanians.

THE VALIDITY OF THE SPECIES *DIPODIUM STENOCHAILUM* Schwartz

(By the Rev. H. M. R. RUPP, Northbridge, N.S.W.)

In this journal, Vol. VIII, No. 60 (Dec., 1939), I expressed the opinion that few would disagree with Schwartz's action in distinguishing the above-named orchid from *D. punctatum* R.Br. Since then, I have had the opportunity of examining more critically a large series of specimens of *D. punctatum* from Queensland, New South Wales, Victoria, Tasmania and South Australia, and comparing them with not only the specimens of *D. stenocheilum* mentioned in my previous article, but with further specimens collected by members of the Australian Army in far northern parts of the continent. The result of these investigations is that I am now unable to support the validity of *D. stenocheilum* as a distinct species.

D. punctatum is undoubtedly a species exhibiting great variability.

This indeed is no more than we should expect in view of its remarkable adaptability to a large range of climates and soil conditions. It is recorded from all States except Western Australia; in Queensland from as far north as Almaden, 100 miles west of Cairns, and in Tasmania from as far south as D'Entrecasteaux Channel. I have myself collected it at practically sea level and at an altitude of nearly 4000 feet; on raw sand, loam, hard shale, and rich, heavy soils.

In the course of the examination referred to above, I have found the following specimens approximately identical in all respects with Schwartz's plant, as interpreted by his description in Feddes Repert. XXIV, 936, and by the specimens already alluded to: Stradbroke Island, Curtis 7/1925; Port Macquarie, Maiden 12/1897; Tweed River, Campbell 1/1915; Hills E. of Bathurst, Kefford 1/1916; Normanhurst, Blakely 2/1918; Waterfall, Joseland 1/1921. All these localities except the first are in N.S.W. The points relied upon by Schwartz for specific distinction are all present in these specimens, which, in most cases, were obviously collected with others

(3) Falkinder, "The Extinct Tasmanians' Mankind," Sydney, Vol. I, Nos. 1, 2, 3, 4.

(4) Thorpe, "Lake Burrill Rock-Shelter," "Mankind," Vol. I, Nos. 4, 5.

(5) Tindale and Birdsell. Results Harvard-Adelaide Universities Expedition 1938-1939. Pub. Records of Adelaide Museum.

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more typical in form. Intermediates exhibiting some but not all of the features said to distinguish *D. stenocheilum* are not uncommon. I venture therefore to propose that in future Schwartz's species be reduced to a variety of Brown's, viz., *D. punctatum*

var. *stenocheilum*. The variety, though apparently occurring most frequently in the far northern areas of Australia, extends sparingly into New South Wales at least as far south as Port Hacking (Waterfall).

7/5/44.

EDIBLE PLANTS OF NORTH QUEENSLAND.

By H. FLECKER.

Continued

CAPPARIDACEAE :

16. *Capparis lucida* R. Br., Thoogeer.
Ripe fruit eaten by natives (Palmer).
17. *C. Mitchellii* Lindl., Caper Tree.
Fruit eaten by natives (Palmer, Thozet).

CRUCIFERAE :

18. *Nasturtium officinale* R. Br., Water Cress. Native of Europe, West Asia, North Africa.
Eaten raw as green vegetable.

GUTTIFERAE :

19. *Lepidium ruderae* L., Narrow Leaved Pepperwort. Native of Europe.
Eaten raw or cooked.
20. *Garcinia Mestoni* Bail., Meston's Mangosteen.
Fruit possesses sharp, pleasant acid flavour and very juicy (Meston and Whelan).

TERNSTROEMIACEAE :

21. *Ternstroemia Cherryi* (Bail.) Merr.
Fruit does not taste badly (Cherry).

MELIACEAE :

22. *Owenia acidula* F. Muell., Emu Apple.
Fruit subacid flavour.

RUTACEAE :

23. *Acronychia Scortechinii* Bail., Logan Apple.
Fruit sharp, pleasant acid taste, useful for jam making (Bailey).
24. *Citrus aurantii* L., Orange, native of Tropical Asia.
Fruit well known.
25. *C. limonia* Osbeck, Lemon.
Fruit well known.
26. *Fortunatus japonicus*, Cumquat.
Fruit well known.
27. *Microcitrus inodora* (Bail.) Swingle, North Queensland Lime.
Fruit juicy, equal in flavour to West Indian Lime (Bailey).
28. *M. Garrawayi* (Bail.) Swing.
Fruit edible.
- 28a. *Eremocitrus glauca* (Lindl.) Swing, Native Cumquat.
Fruit useful for making preserves.

BURSERACEAE :

29. *Canarium australianum* F. Muell., Kame.
Nuts (very small) eaten.
30. *C. Muelleri* Bail., Elemi Tree.
Nuts (very small) eaten.
31. *Ganophyllum falcatum* Blume.
Fruit edible.

ZYGOPHYLLACEAE :

32. *Tribulus Solandri* F. Muell., Solander's Caltrop.
Roots eaten roasted. (Roth).

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GERANIACEAE :

33. *Geranium dissectum* L., Native Geranium.
Fruits eaten roast or raw. (Q.A.J., LI, p. 300.)

OXALIDACEAE :

34. *Oxalis corniculata* L., Wood Sorrel.
May be chewed. Acid flavour.

MALVACEAE :

35. *Urena lobata* L., Urena.
Kernel eaten raw.
36. *Hibiscus ficulneus* L., Cooreenyan.
Stem and root of young plant roasted in ashes and eaten like potato.
(Palmer.)
37. *H. rhodopetalus* Muell.
Buds eaten raw.
Young stems eaten raw.
38. *H. divaricatus* Grah.
Buds eaten raw (Palmer).
Thick root peeled and eaten (Palmer).
39. *H. heterophyllus* Vent., Bathman.
Roots of young plants, young shoots and leaves eaten raw (Thozet).
40. *H. tiliaceus* L., Coast Cottonwood.
Roots and young growth eaten for food.
Mucilaginous bark sucked for food.
41. *Thespesia populnea* Corr.
Smooth leaves, flower buds and flowers eaten raw or cooked.

STERCULIACEAE :

42. *Sterculia quadrifida* R. Br., Ko-ral-ba.
Seeds edible.
43. *S. Garrawayae* Bail., Morna.
Fruit eaten raw (Roth).
44. *S. ramiflora* Benth., An-gi-ur.
Seeds roasted and eaten (Roth).
45. *S. Trichosiphon* Benth., Broad-leaved Bottle Tree.
Roots of young plants and seeds eaten by natives (Thozet).
46. *S. diversifolia* G. Don, Kurrajong.
Roots used for food.
Seeds roasted, ground and steeped in boiling water, drunk as coffee.
(Q.A.J., LI, 1939.)
47. *S. rupestris* Benth., Narrow-leaved Bottle Tree.
Roots of young plants and seeds eaten by natives (Palmer, Thozet).
Natives refresh themselves with mucilaginous sweet substance from tree (Thozet).
48. *S. foetida* L., Native of
Seeds eaten raw or roasted.

TILIACEAE :

49. *Grewia polygama* Roxb., Koolin.
Fruit eaten by natives (Bailey).

ELAEOCARPACEAE :

50. *Elaeocarpus Bancroftii* F. Muell. et Bail., Ebony-heart Quandong.
Seed has agreeable flavour. Eaten by settlers (Bailey).
51. *E. grandis* F. Muell., Northern Silver Quandong.
Fruit eaten (Bailey).

EUPHORBIACEAE :

52. *Flueggea microcarpa* Blume, Tharginyah.
Fruit eaten raw by natives (Palmer and Roth).
53. *Antidesma Ghaesembilla* Gaertn., Black-Currant Tree.
Fruit used for jam making by settlers (Bailey).
54. *A. Dallachyanum* Baill., Je-jo.
Fruit eaten by aboriginals (Roth).
Fruit used for jam and jelly making.

(To be Continued.)

The North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. XI

CAIRNS, 1st SEPTEMBER, 1944.

No. 72

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Cairns Public School, Abbott Street, Cairns,
usually on second Monday in March, June, September
and December, at 8 p.m.

ANNUAL GENERAL MEETING, MONDAY, 11th SEPTEMBER, 1944.

BUSINESS: Election of Officers, Balance Sheet, etc.

MEETINGS OF CLUB.

Monday, 12th June, 1944, Talk by Miss Jean Devanny on Green Island and Visitors. References also made to request by fishermen to publicly state specific identity of fish subject to

price control, owing to confusion of vernacular names. Need for protection of Dugong was referred to, and botanical references in Legacy Club Book, "Living on the Land" criticised.

ELECTION OF MEMBERS.

New members elected: Miss Monica Osborne, Cairns, Miss Routledge,

Cairns, and Mrs. B. Sganzerla were elected members.

HABITS OF SAWFLIES (PHILOMASTIX NANCARROWI). HYMENOPTERA, TENTHREDINIDAE.

(By MAURICE E. LEASK, Memb. N.Q.N.C. and F.N.C.V.)

In the big scrub near Herberton, N.Q., a small sawfly was observed tending its eggs and young larvae. This exhibition of social habits is worthy of further close examination.

The females of this species (1) select Wild Raspberry (2) scramblers and some deposit their eggs on each of the two plants. On both plants the habits of the adult coincide, though the different leaf arrangements necessitate minor adjustments. The following details refer to sawflies on *Rubus rosaeifolius* in particular.

In the middle of May, the adult deposits her eggs on the under side of the tip of the terminal leaf of a composite stalklet. Usually from 30 to 40 eggs are deposited in a close group

placed athwart the midrib; these eggs are circular discs, with a dark stripe on the tip. The fewer tube-like eggs, pale mauve in colour, may be infertile.

After ovipositing, the female retires to the junction of that leaf with its stem (fig. A, 1), where she remains with wings outspread, clinging upside down, the head invariably directed toward the centre of the plant.

Several days later the eggs hatch, and within two days the tiny larvae have destroyed this terminal leaf. They proceed to crawl along the under side of the stem; on reaching the adult's legs they cross to the upper side.

When a few larvae have reached the first pair of leaves, making their way out of their tips, the female moves forward to mark the way, stopping just short of the stem junctions. As the next larva reaches her middle leg, it may stop as though sensing the

(1) *Philomastix nancarrowi* Froggatt, determined by the Queensland Museum, Brisbane.

(2) *Rubus rosaeifolius* Sm. and *R. Hillii* E. Muell, determined by N.Q.N.C.

appendage; then almost imperceptibly she moves that leg forward, thus assisting the larvae on to the junction, when it readily makes its way up the leaf stalk.

Finally the adult takes up her position on the junction (Fig. A, 2) with her hind leg actually straddling two of the larvae, where she remains night and day, rain and fine until the larvae

on the junction of the branchlet with the main stem, there to await the move to the next branchlet. At this stage, or any earlier one, the female may die; six adults were observed on these food-plants, dead and fixed on the stem junctions, with larvae in various stages of development.

Among the sawflies, "maternal attendance" has been recorded pre-

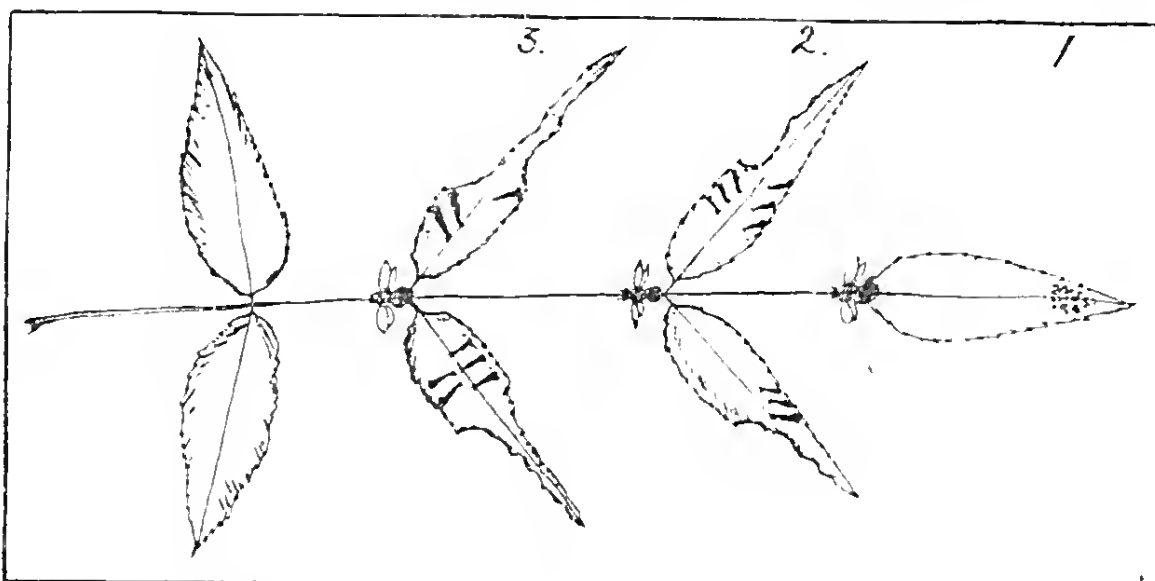


FIG. A. GROWTH OF LARVAE (R. ROSAEFOLIUS).

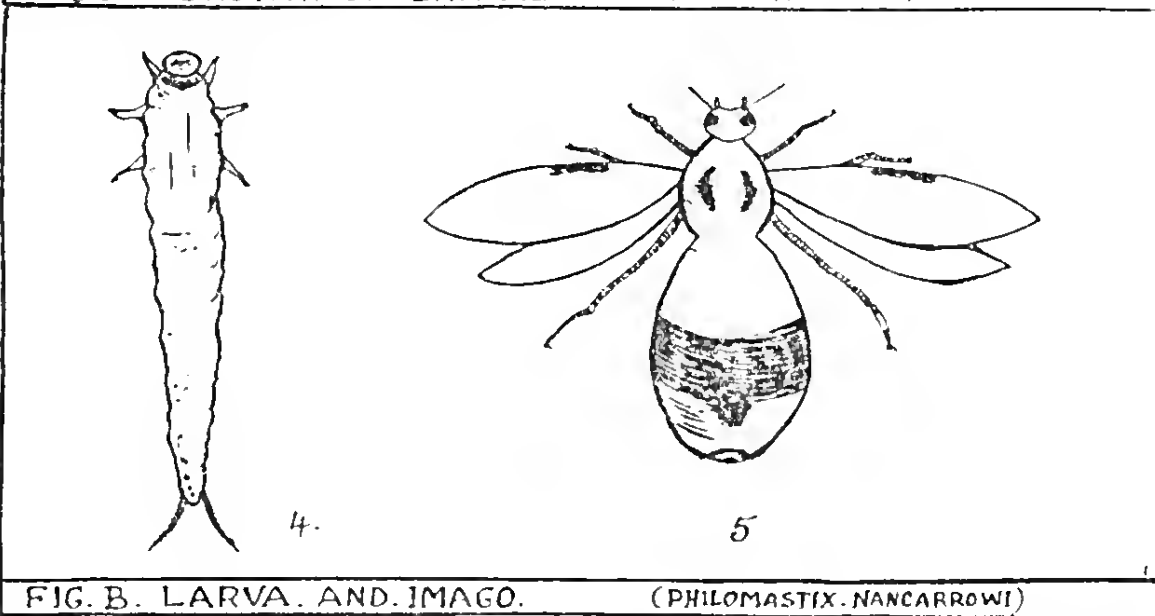


FIG. B. LARVA AND IMAGO. (PHILOMASTIX NANCARROWI)

move forward to the second pair of leaves; she then waits on the second junction (Fig. A, 3). When touched she shakes vigorously from side to side, as though to frighten off the intruder.

When the three pairs of leaves are eaten, the rapidly-growing larvae (Fig. B, 4) and adult (Fig. B, 5) move down the plant, making towards its centre, the female now taking up her position

viously for *Perga lewisii* Westwood (3) and for the genera *Dielocerus*, *Diglasinus* and *Pachylota* (4). Chas. C.

(3) Froggatt, W.W., Notes on the Life History of Certain Sawflies (Genus *Perga*), with Description of a New Species. Proc. Linn. Soc. N.S.W. (2), V, 2, (Sept. 29, 1890), 283-288.

(4) Benson, R.B., On the Classification of Sawflies (Hymenoptera Symphyta). Trans. R. Ent. Soc. Lond., 87 (15), Oct. 25, 1938, 353-384, 47 t.f.s.

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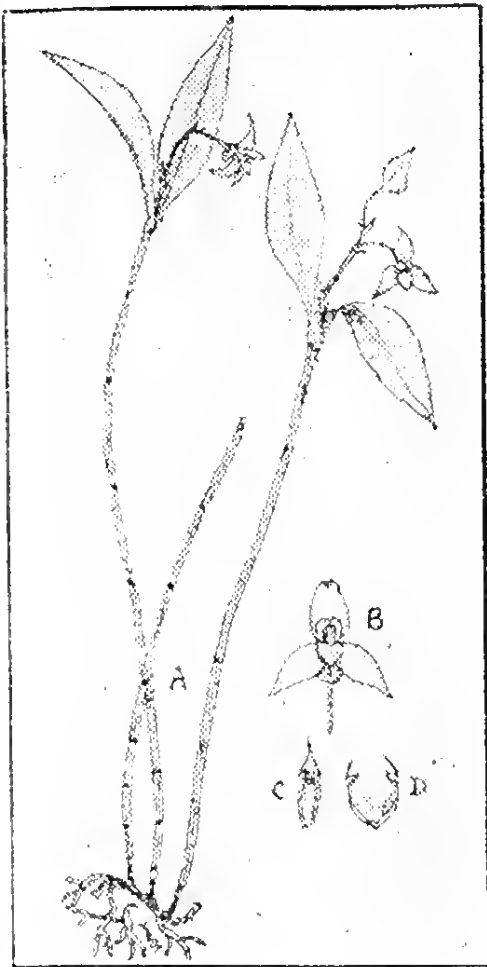
Brittlebank raises an interesting point when he asks, "Is it the remains of a habit which goes to prove that some time in the past the larvae of this species of sawfly (*P. lewisi*) lived in companies, and were watched and fed by the parent fly as is common with our bees and wasps?"

The habit has not yet been recorded for *Philomastix nancarrowi*, though Mr. H. Hacker was aware of it. However, the above observations do not indicate that the insect "fluttered" over its young, as may have been seen elsewhere.

In 1890, *P. nancarrowi* from Cairns (5) was first described as a new species. Last year the adult (6) was captured with its larvae, and a tendency to social habits might have been suspected.

These observations cover eight individual adults examined for a period of fifteen days until violently inclement weather destroyed many insects.

In addition, the Broad-leaved Raspberry, *Rubus Hillii* F. Muell. is recorded as a new food-plant for this sawfly.



(5) Froggatt, W.W., Descriptions of a New Genus and Two New Species of Tenthredinidae. Proc. Linn. Soc. N.S.W. (2), V, 3, (Dec. 16), 487-490.

(6) Leask, M.F., Records of Two Sawflies, N.Q. Nat., Vol. XI, 69, (Sept. 1, 1943), 2.

DENDROBIUM ADAE

The above drawing by Mr. H. M. R. Rupp represents a young plant of *Dendrobium Adae* Bail. at the time of its first flowering. In Bailey's description of this species no mention is made of the tendency of the petals to close together after the flower expands, thus giving it somewhat of the appearance of a miniature *Lycaste* flower. Owing to this, the plant depicted was not recognised at first as *D. Adae*, and the grower proposed to name it *D. lycastoides*. Subsequently, however, the plant proved beyond question to belong to Bailey's species.

EDIBLE PLANTS OF NORTH QUEENSLAND.

By H. FLECKER.

Continued

EUPHORBIACEAE:

55. *Antidesma Bunius* Spreng., Bignai.
Fruit useful for jam making (Bailey).
Fruit eaten by aboriginals (Roth).
56. *A. parvifolium* F. Muell.
Fruit useful for jam making (Bailey).
57. *A. erostre* F. Muell.
Fruit useful for jam making (Bailey).

58. *A. sinuatum* Benth.
Fruit useful for jam making (Bailey).
59. *Aleurites moluccana* Willd., Candle Nut.
Seeds eaten after roasting.
60. *Acalypha Wilkesiana* Muell. Arg., Native of South Sea Islands.
Young leaves and young shoots may be cooked and eaten.
61. *Ricinus communis* L., Castor Oil Plant. In East Indies, inflorescence and young fruits when boiled eaten, also ripe seeds when roasted.
62. *Omphalea queenslandiae* Bail.
Nut edible.
63. *Manihot utilissima* L., Cassava. Native of Brazil.
(Bitter and sweet cassava distinguishable by taste. Former poisonous if eaten raw.)
Commercial source of tapioca. Bitter cassava, crush roots thoroughly and wash mass with several changes of water. Both kinds cooked. Young leaf tips cooked.

MORACEAE :

64. *Ficus colossea* F. Muell., Bon-na-bool-ka.
Fruit eaten by aboriginals (Bailey).
65. *F. Cunninghamii* Miq., Mooleeah.
Fruit eaten (Roth).
66. *F. Henneana* Miq.
Fruit suitable for preserving (Bail.).
67. *F. retusa* L., Tunduli.
Fruit eaten by natives (Roth).
68. *F. ehretioides* Benth., Magura.
Fruit eaten by natives (Roth).
69. *F. opposita* Miq., Murn-tyul.
Fruit eaten raw (Roth).
70. *F. hispida* Benth., Wo-o.
Leaves eaten raw (Roth).
71. *F. esmeralda* Bail.
Fruit eaten by aboriginals (Roth).
72. *F. glomerata* Willd., Cluster Fig.
Fruit eaten by aboriginals (Roth).
73. *F. pleurocarpa* F. Muell.
Fruit eaten by aboriginals (Roth).

URTICACEAE :

74. *Elatostemma reticulatum* Wedd.
Used as spinach.

CELASTRACEAE :

(*Siphonodon pendulum* Bail., Weeping Ivory Wood. Although Roth reports fruit eaten raw, two native girls were seriously ill and a third died after eating it at Weipa Mission Station.)

SAPINDACEAE :

75. *Diploglottis Cunninghamii* Hook f., Australian Tamarind.
Arils used for jam making (Bailey).
76. *D. Cunninghamii* Hook f., var. *Muelleri* Bail., Queensland Tamarind.
Arils make excellent jam (Bailey).
77. *D. diphylostegia* Bail.
Arils eaten raw and used for jam making (Q.A.J., Feb., 1939, p. 225).
78. *Litchi chinensis* Sonnerat, Litchi. Native of China.
Succulent part of fruit edible after shelling.
Same edible when dried like raisins in shells.

ANACARDIACEAE :

79. *Mangifera indica* L., Mango.
Juicy part of fruit edible. Also used for preserves and chutnees.
In East Indies leaves eaten as greens.
80. *Buchanania Muelleri* Engl., Bandai.
Fruit edible.

(To be Continued.)

The North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. XII.

CAIRNS, 1st DECEMBER, 1944.

No. 73.

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Cairns Public School, Abbott Street, Cairns,
usually on second Tuesday in alternate months, at 8 p.m.

NEXT MEETING, TUESDAY, 9th JANUARY, 1945.

MEETING OF CLUB

Annual General Meeting, Monday,
11th September, 1944. Officers elected:
President, Dr. H. Flecker; Vice-
Presidents, F. R. Morris, S. E. Step-
hens; Hon. Secretary and Treasurer,
J. Wyer; Committee, Mr. H. S.
Sullivan, and Miss Jean Devanny;
Hon. Auditor, J. Gorton.

Election of Members: Capt. H. M.
Sullivan, Sgt. M. F. Leask.

Tuesday, 14th November, 1944.

Election of Member: Pilot Officer
S. R. White, R.A.A.F., R.A.O.U.

An address was given by Pilot
Officer S. R. White on Protection of
Birds Through Education.

BOOK REVIEW

23. *Marvels of the Great Barrier
Reef, North Australia and New Guinea.*
By D. Tennant, 50 pages with many
fine photographic illustrations. Al-
though acknowledgement is made to
the N.Q. Naturalists' Club and its

members for material supplied, the
latter are in no way responsible for the
numerous serious errors and irregular
presentation of the matter, as no oppor-
tunity was afforded to view the proofs.

SOCIAL BREEDING BIRDS.

(By M. S. R. SHARLAND, R.A.O.U.)

Australian ornithology offers un-
limited scope for investigation.
Hitherto the systematics of taxonomy,
the reshuffling of genera and determina-
tion of specific distinctions, have
chiefly exercised the minds of ornitho-
logists, while research into life-
histories and the very intriguing ques-
tion of how birds actually live has not
been given the attention that it de-
serves. Due to the lack of field
observers largely, few complete records
exist of the life-histories of Australian
birds. Thus there are many species
and groups, some quite familiar to
observers, whose habits await fuller
investigation and study.

Of particular interest for me are
the social breeding birds—birds which
either nest together in communities or
aid one another in constructing nests
and rearing the young. Excluding the
sea birds, there are in Australia several
species of totally unrelated genera
which, instead of separating into pairs
for breeding, in the orthodox fashion,
retain the flock habit throughout the
year and breed under conditions that
are obviously social and harmonious.

These can be listed as follows:—
Apostle Bird (*Struthidea cinerea*),
White-winged Chough (*Corcorax me-
lanorhamphus*), Shining Starling
(*Aplonis metallica*), the Babbler

(*Pomatostomus* sp.), Fairy Martin (*Hylochelidon ariel*), the *Sitellas* (*Neositta* sp.), Dusky Wood Swallow (*Artamus cyanopterus*). Further observation might result in additions being made to this number, as other species are suspected of possessing social breeding habits, chiefly among the *Malurus* group, but as yet the evidence is not convincing. In fact, little or no detailed study has been given to the community behaviour of any of the above-mentioned species.

Most perplexing of the group are *Struthidea* and *Coreorax*. The nesting behaviour of each follows much the same pattern, so let me take *Coreorax* as being typical. The hub of the flock is the substantial bowl-shaped mud nest, built on a horizontal limb at various heights, according to the type of vegetation among which the species lives, its life revolves about this nest, which is shared by the community. And a community, or flock, may consist of from eight to twenty birds.

My records of egg clutches extending over several years, in different parts of Australia, show that four is the average number laid; in one instance the birds were incubating only two eggs, and the largest recorded clutch is eight. There is only one nest to each flock. As there is no apparent difference in the appearance of the sexes it is not possible to determine the ratio of males to females in a flock, but in this respect equality is assumed. If this is so, then comes the difficulty of deciding whether eggs are laid by all the female members of the flock or by a limited number. A clutch of two eggs would indicate that the act of laying was confined to one individual; on the other hand, a clutch of four suggests that two birds shared the laying, while a clutch of eight definitely, I think, would point to the work of at least three different birds.

And the remainder of the flock what of these? Do they consist of unmated females whose maternal instinct is satisfied by sharing the work of incubation and feeding the young, are they mated but prevented from laying, or are they all males? Were the sexes clearly defined by exterior characters the answers would be simple. As it is, both in *Coreorax* and

Struthidea; the sexes being alike superficially, the problem must remain unsolved until an anatomical examination is undertaken of each individual, which, of course, would involve extensive collecting of specimens.

That different individuals do share the work of nest construction, incubation, and tending of young, I have proved more than once from close observation. Practically all members of the flock, both in *Coreorax* and *Struthidea*, aid in building the grass-reinforced mud nest, and the same nest will be used in successive breeding seasons, with a little fresh mud added to the rim. When it comes to deposition of eggs, I consider that females with the strongest "personality" are able to obtain priority, and although the various individuals usually exist in complete harmony together, at this period it is the birds which are relatively the most pugnacious that succeed in laying. A bird in possession of the nest will counter the approach of another by raising its wings, snapping its beak, and creating a display of anger or resentment which is generally sufficient to drive the unwanted individual from the tree; but this same sitting bird will unhesitatingly give way to another member of the flock who will come, possibly to lay, or to take its share of incubation. Probably, here, a "pecking law" exists as in domestic fowls, individual birds possessing certain rights, according to age or temperament, which are acknowledged by inferiors.

Whatever may be the advantages of the social behaviour of these two mud-nest builders, it is obvious that it results in mortality among their offspring. In the case of *Coreorax* particularly, the nestlings would appear to suffer adversely from possessing an abundance of "foster-parents." Seldom are more than two young ones reared to maturity, although originally the nest may have contained six eggs, all being hatched. Frequently I have observed dead young in the nest and on the ground below, and out of one nest which contained five newly-hatched young a single bird only lived to leave it. Over-indulgent "parents" appear either to kill them with too much food or trample them under foot in the various change-overs made by

different birds desirous of mothering them. Thus it is that the breeding flocks from year to year generally remain numerically static. Both species are well distributed over the inland districts of Australia, and in places *Corcorax* comes close to the eastern coastline, but nowhere are they seen in large numbers during the breeding season.

Discussion of these two forms leaves little space for mention of the equally interesting habits of other sociable species which I have listed. So I shall outline them but briefly.

In North Queensland the commonest of these is the Shining Starling. In a group of three trees growing on the bank of the Russell River, near Babininda, I recently counted 76 nests of the species, roughly globular objects composed of dried grass, attached to the finer branches, often so close to each other as to be touching. In temperament there is a sharp contrast between this species and the mud-builders, already discussed. *Aplonis* is noisy, at times quarrelsome, and each pair owns a nest in the colony which it defends against intruders of its own species. As the birds sometimes have to travel a good distance to obtain suitable nesting material, individual members of the community have no compunction about saving themselves trouble by stealing from their neighbours. Hearing much agitation and chatter from birds about one group of nests I looked up to see a bird, poised on fluttering wings, pulling a loose strand of grass from the bottom wall of a nest, and though attacked by the owners who were noisily encouraged by others nearby, it flew off with the stolen article in its beak and hurriedly entered its own nest in another part of the tree. I have seen this thieving to occur in other colonies, much the same thing taking place in a colony under observation at Mossman.

The lives of various kinds of

Pomatostomus (Babblers) also circulate about the nest, which, in this case, is a large bulky object, domed, and made of sticks, leaves and grass. The work of building is shared by members of the community, which may number up to eight or ten birds, and though only a single nest is built to accommodate the needs of a small flock, a large company may have three or four nests, in the same tree or in adjacent trees. Furthermore, the nest may also be used by a bird quite unrelated to the owners, for, occasionally, the Blue-faced Honeyeater (*Entomyzon cyanotis*) builds its open cup-shaped nest on top of the larger structure, using the Babblers' nest as a foundation for its own.

Of the other community species, the *Sitellas* (Tree-Runners) aid one another in building the nest, the assistants, I believe, being the young ones of the first brood or of the previous breeding season. The cryptic pattern of a *Sitella's* nest is such that the object is practically invisible to all but a well-trained human eye, situated as it is in a dead fork high in a tree, but curiously anomalous is the habit of the bird to fuss and twitter loudly whenever it visits it, a practice which at once reveals its position.

Hylochelidon ariel (Fairy Martin) employs a concerted effort to construct a group of nests, each small bird bringing a pellet of mud in its beak, to add to the nest of its neighbour in the colony if the building of its own is finished.

Although it is not a common practice for *Artamus cyanopterus* to share in the work of nest building, I have recorded instances where more than one pair of these birds has aided others to build the frail stick nursery. In other birds, if we had time to study them more closely, these principles of mutual help and co-operation would probably be proved to exist to a far greater extent than we suspected.

EDIBLE PLANTS OF NORTH QUEENSLAND.

By H. FLECKER.

Continued

ANACARDIACEAE :

81. *Semecarpus australiensis* Engl., Tar Tree.

Soft swollen peduncle supporting hard inedible fruit may be eaten raw or cooked.

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82. *Pleiogynium Solandri* Engl., Tulip Plum.
Fruit very acid when fresh. If buried in sand for day or two is quite refreshing.

PORTULACACEAE :

83. *Portulaca oleracea* L., Purslane.
Whole plant eaten raw or cooked. Splendid substitute for spinach. Tap root tastes like radish.
84. *P. australis* Endl., Me-mama.
Rootstock roasted and eaten (Bailey).

AMARANTHACEAE :

85. *Amaranthus spinosus* L., Needle Burr.
Whole plant eaten as green vegetable.
86. *A. leptostachyus* Benth.
Young shoots make excellent greens when cooked.
87. *A. pallidiflorus* F. Muell.
Young shoots make excellent greens when cooked.
88. *A. Mitchellii* Benth.
Used as a vegetable.
89. *A. interruptus* R. Br., Native Amaranth.
Young shoots make excellent greens when cooked.
90. *A. viridis* L., Green Amaranth.
Young shoots make excellent greens when cooked.
91. *Achyranthes aspera* L., Chaff-flower.
In East Indies young leaves eaten.

CHENOPODIACEAE :

92. *Enchylaena tomentosa* R. Br.,
Fruit eaten raw.
93. *Suaeda maritima* (L.) Dumort. Sea Blite.
In East Indies young plants after boiling well, eaten.

AIZOACEAE :

94. *Susuvium portulacastrum* L., Seaside Purslane.
Whole plant after washing out excess salt, eaten raw or cooked.

NYCTAGINACEAE :

95. *Boerhaavia diffusa* L., Tah-vine.
Thickened leaves and somewhat fleshy stems cooked and eaten. Roots roasted and eaten. Mealy sweet taste (Palmer).
96. *Elaeagnus latifolius* L., Millai Millai.
Fruit eaten and said to be pleasant.

LEGUMINOSAE :

97. *Psoralea badocana* Benth., A-maga.
Roots scraped, roasted and eaten.
98. *Sesbania grandiflora* Pers., Large-flowered Sesbania Pea.
Young leaves, young pods, large flowers and flower buds cooked and eaten. (Do not eat mature seeds.)
99. *S. aegyptiaca* Pers., Ngean-jerry.
Green pods as well as seeds nutritious (T. Gulliver).
100. *Arachis hypogaea* L., Peanut.
Seeds eaten raw or cooked.
101. *Hardenbergia retusa* Benth., Kong-an.
Roots roasted and hammered on stone before being eaten (Roth).
102. *Erythrina vespertilio* Benth., Grey Corkwood.
Roots eaten raw. (Roth).
103. *Mucuna utilis* Wall ex Wight, Native of Tropics.
Dried ripe seeds eaten roasted.
104. *Phaseolus Mungo* L., Komin.
Roots after being baked, eaten (Thozet).
105. *Vigna vexillata* Benth.
Pods used as French beans.
106. *V. marina* (L.) Merr. Beach Bean.
Pods and seeds eaten.

(To be Continued)

NORTH QUEENSLAND NATURALISTS' CLUB

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NEXT MEETING, TUESDAY, 13th MARCH, 1945.

Address by F/O R. G. Handley, R.A.A.F. "The Weather for the
Man in the Street."

MEETING OF CLUB

Tuesday, 9th January, 1945. Address by Commander A. E. Salzberger, U.S.N.,
"Snakes of the World."

NOTES ON BIRDS BREEDING WITHIN THE CAIRNS CITY LIMIT

(S. R. White.)

The following list of birds is compiled from field notes on species found breeding within the Cairns city limits between August, 1944, and January, 1945, inclusive. The list is not claimed to be comprehensive but is submitted as a beginning to an aspect of local bird observation that should prove to be of considerable interest with the passing of time.

Closer settlement, and the spread of residential areas, with all the modifications to environment caused by draining, clearing and reclaiming, will, without a doubt, enforce the entire disappearance of some species, greatly limit the activities of others, and create new niches in which new arrivals will establish themselves. Already the city has a numerous bird population that is distinctly metropolitan in character, namely, such introduced species as the Common Myna and the Park Pigeon. The native Peaceful Dove appears, by comparison with its distribution through surrounding bush areas, to have adjusted itself remarkably well to conditions brought about by closer settlement. It is so common even in the more busy section of the city, that

parties of up to fifty birds feeding along the asphalt streets, roadsides and lawns are not an uncommon sight. It breeds in numbers among the street trees and gardens, maintaining its numerical strength despite the ever present menace of domestic cats. What will become of this bird when the Indian Turtle Dove (*Streptopelia surattensis*) . . . released from Gordonvale some years ago, extends its range to Cairns, remains to be seen.

The White-breasted Wood Swallow which has everywhere shown a liking for agricultural areas, breeds freely among the coconut palms in public parks and private homes. Sunbirds often display a preference for nesting about houses and buildings, a practice that is sometimes adopted by the Northern Warbler. Yellow Fig-birds, Noisy Friar Birds (*Philemon corniculatus*), Varied Honeyeaters (*Meliphaga versicolor*), and Yellow Honeyeaters (*M. flava*) are common enough birds in the city at present, but their future appears to be closely associated with street trees, and the flora of Public Parks and private homes. The Mistletoe bird is a well established city resi-

dent, feeding almost exclusively on berries of the various species of mistletoe, for the spread of which it is no doubt largely responsible, and its future is linked accordingly, with that of the mistletoe.

Two species of Fairy Wrens resident locally, have a more obscure outlook. The Red-backed Wren usually prefers an environment of Blady grass, and the less familiar but equally numerous Lovely Wren appears in this district to be inseparable from a plant association in which lantanas are dominant. When these types of flora disappear from within the city, the wrens will probably vanish with them.

Both the Stone Curlew, and the Black-fronted Dotterel, which were found breeding on the same salt pan environment, will undoubtedly be eliminated as reclamation reduces their habitat. The Spangled Drongo, Brown-backed Honeyeater, Papuan Frogmouth and Rainbow Bird already breed only in more secluded areas on the fringes of the city.

The Red Backed Sea Eagles, and Whistling Eagles breeding at Edge Hill, have apparently been established there for some years, and may continue to use their present nesting sites for many years, provided they are not in any way interfered with. Should the trees that they have occupied be destroyed, it seems most unlikely that other suitable sites could be found within the bounds of the city, even if the birds showed any desire to remain. Indeed, their present existence must be almost unique.

PEACEFUL DOVE (*Geopelia placida*) :

Probably the most numerous city dwelling bird. These doves were observed to be breeding during every month covered by the period August to January, inclusive, but were most active between September and November. In one case, where a more detailed observation was possible, it was found that two broods were raised.

BLACK-FRONTED DOTTEREL (*Charadrius melanops*) :

25/10/44 a depression containing two eggs within a few yards of the Stone Curlews' egg.

STONE CURLEW (*Burhinus magnirostris*) :

A nest of a single egg on which one of the parents was brooding, 20/10/44 on the borders of a salt pan area at the North Western end of the Esplanade. This egg hatched on 25/10/44.

WHISTLING EAGLE. (*Haliastur sphenurus*) :

27/10/44, birds were in attendance at a nest in the Edge Hill area, which apparently contained young.

RED-BACKED SEA EAGLE. (*Haliastur indus*) :

The nest in the Edge Hill School ground appeared to contain young birds. 30/8/44.

PAPUAN FROGMOUTH. (*Podargus papuensis*) :

A single breeding record. 6/12/44. One of the parent birds which flushed, was brooding. The young bird flew from this nest on 12/1/45.

RAINBOW-BIRD. (*Merops ornatus*)

Numerous nesting tunnels were found at Edge Hill during September, October and November.

NORTHERN WARBLER. (*Gerygone mouki*) :

A nest was found [near Edge Hill 6/12/44. It was not examined, but two of the birds were busily engaged feeding a young Bronze-Cuckoo, species undetermined, and were still in the same locality a week later.

LOVELY WREN. (*Malurus amabilis*) :

Three immature birds were captured and examined before release, 18/9/44, in lantana at Edge Hill, where a nest containing three eggs was located 27/10/44.

WHITE-BREASTED WOOD SWALLOW. (*Artamus leucorhynchus*) :

Numbers of these birds were present throughout the whole period, but nests were not noted until September. During October several records of nests with eggs; and other nests, not examined, but upon which the birds could be seen brooding were made. All were situated in coconut palms which

appear to be highly favoured for this purpose. Numbers of feathered young were on the wing by December.

MAGPIE LARK. (*Grallina cyanoleuca*) :

Birds were feeding young in a nest at Edge Hill 27/11/44.

MISTLETOE-BIRD. (*Dicaeum hirundinaceum*) :

Although only a single nest was found, 20/10/44, the species was common enough. The birds had built in an orange tree overhanging a much used footpath, and just above head high. Its location was well known to a number of children who paid it a great deal of well meaning attention, on one occasion even removing the eggs to see if they were alright. Despite this somewhat unusual treatment, two young were successfully raised, flew, and remained in the locality for some weeks after they were abandoned by their parents. During the latter stages of their family raising, the adults became so tame that it was possible to photograph the female by hand from a distance of fifteen inches, as she fed her offspring at the nest.

YELLOW-BREASTED SUNBIRD. (*Cyrtostomus frenatus*) :

Two unoccupied nests were recorded, fastened to pieces of rope on buildings in the Edge Hill area.

BROWN-BACKED HONEY-EATER. (*Gliciphila modesta*) :

Nests of this species were only found in the one locality at Edge Hill where the predominant tree was *Melaleuca* sp. A strange and unusual feature of many of the nests recorded was the manner in which a new structure had been built almost adjoining one used for a previous clutch or during a previous season. Nests with eggs were found during September, October, November and December, and one examined during January contained a

young Cuckoo of an undetermined species. Probably the Fantailed Cuckoo (*Cacomantis flabelliformis*).

DOUBLE BANDED FINCH. (*Steganopleura bichenovii*) :

Small parties and pairs were often seen about gardens and homes in the city, and on several occasions birds were noted carrying grasses. The only nest examined appeared to be used by a family regularly as a roosting shelter.

RED BROWED FINCH. (*Aegintha temporalis*) :

Common about the city in small parties and flocks. Young birds in immature plumage were seen 27/8/44. Two nests were found at Edge Hill, 27/11/44. On this occasion, one of the birds was seen displaying. It held a piece of grass in its bill and proceeded to hop up and down on its perch.

YELLOW FIG-BIRD. (*Sphecotheres flaviventris*) :

Nests were found in street trees, and about the outskirts of the city during November and December.

SPANGLED DRONGO. (*Chibia bracteata*) :

Only one breeding record was made. 27/11/44, at Edge Hill, both birds were engaged in building.

COMMON MYNA (*Acridotheres tristis*) (Introduced) :

Breeds freely in crevices, cavities, gutterings and suchlike all through the main business area of Cairns. Birds were observed carrying grass and feathers into these nesting sites throughout the whole period of observation.

PARK PIGEON. (*Columba livida*) (Introduced) :

Flocks of these birds are always to be seen foraging over the streets in the busiest portion of the city. They have established themselves among the ledges of public buildings.

EDIBLE PLANTS OF NORTH QUEENSLAND.

By H. FLECKER.

Continued

LEGUMINOSAE :

107. *Dolichos Lablab* L., Hyacinth Bean. Pantropical.
Green pods cooked and eaten as vegetables.
Flowers, young leaves and ripe seeds cooked and eaten.

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108. *D. biflorus* L., Mal-kan.
Roots roasted and eaten.
109. *Atylosia reticulata* Benth., Karlbun.
Roots after being roasted and hammered, used for food (Roth).
110. *Eriosema chinense* Vog., Torakal.
Roots roasted and skinned before eating (Roth).
(*Castanospermum australe*. Bancroft reports that in times of scarcity, beans eaten by aborigines after soaking, pounding and baking. Small piece of bean, whether previously soaked in water or not, even roasting causes severe diarrhoea with intense griping.)
111. *Cajanus cajan* Spreng., Pigeon Pea. Native of India.
Beans edible if thoroughly cooked.
112. *Labichea Buettneriana* F. Muell.
Roots roasted and eaten.
113. *Tamarindus indicus* L., Tamarind. Native of India.
Young leaves and flowers cooked and eaten as greens. (Acid pulp surrounding seeds may be eaten, but is mild purgative.)
114. *Entada scandens* Benth., Matchbox Bean.
Beans roasted or baked, pounded, soaked in water for 10 to 12 hours before being eaten (Palmer).
115. *Adenanthra abrosperma* F. Muell, Oon-doo.
Seeds roasted in pods before being eaten (Palmer).
116. *Acacia decora*. Reichb.
Gum eaten (Palmer).
117. *A. homalophylla* A. Cunn, Yarran.
Gum eaten (Palmer).
118. *A. Farnesiana* Willd., Bunkerman.
Pods roasted and eaten (Palmer).
119. *A. Bidwillii* Benth., Yadhthor.
Roots of young trees, roasted, peeled and eaten (Palmer and Thozet).
120. *Leucaena glauca* Benth., Vi Vi, Pantropical.
Young pods, leaves and flower buds eaten raw.
In Celebes, ripe seeds roasted and ground for use as coffee.
121. *Cassia occidentalis* L.
In Dutch Indies young leaves and unripe pods eaten, steamed, and pods eaten raw.
122. *Albizia procera* (Roxb.) Benth.
In Dutch Indies, young shoots eaten raw.
123. *Pithecolobium moniliferum* Benth., Muller.
Young pods roasted and eaten (Palmer).
124. *Poinciana regia* L., native of Madagascar.
Flowers eaten raw.

MORINGACEAE.

125. *Moringa pterygosperma* Gaertn., Native of India.
Young pods eaten as greens.
Leaves and shoots cooked and eaten (Q.A.J., LXIV, p. 802).

ROSACEAE :

126. *Parinarium Nonda* F. Muell., Nonda.
Fruit edible.
127. *Rubus rosaefolius* Sm., Native Raspberry.
Fruit edible.
128. *R. alceaefolius* Poir.
Fruit edible.
129. *R. Hillii* F. Muell.

CUNONIACEAE :

130. *Davidsonia pruriens* F. Muell., Davidsonian Plum.
Fruit edible. Used for jam making.

RHIZOPHORACEAE :

131. *Bruguiera Rheedei* Blume. Black Mangrove.
Fruit prepared for eating (Roth).

(To be Continued.)

The North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. XII.

CAIRNS, 1st JUNE, 1945

No. 75.

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Cairns Public School, Abbott Street, Cairns,
usually on second Tuesday in alternate months, at 8 p.m.

NEXT MEETING, TUESDAY, 10th JULY, 1945.

Address by L. J. WEBB, Bureau of Tropical Agriculture, South Johnstone.

MEETINGS OF CLUB

13th March : Address by Flt.-Lieut. R. G. Handley, R.A.A.F., "The Weather for the Man in the Street."

New Members Elected : S. H. Martin, Cairns; Harold Armstrong, Cairns; Gordon Stephens, Edge Hill; J. Williamson, Georgetown; G. O'Leary, Cairns.

8th May, 1945 : Coloured cinematograph, "North Queensland as Seen Through the Eyes of a Naturalist."

New Members Elected : Leonard Simpson, Cairns; Pte. J. McN. Pow, A.I.F., Victoria; Sgt. B. Shipway, A.I.F., Perth, W.A.

Check List of N.Q. Orchids now available at 1/- per copy, from Hon. Secretary.

RELICS OF THE HINCHINBROOK ISLAND ABORIGINES

(By S. E. STEPHENS, Cairns.)

Some 65 to 70 years ago the Hinchinbrook Island tribe or aboriginals was fairly strong. No accurate records appear to be extant of the number of individuals comprising the tribe, but residents of the Cardwell district in 1875 to 1880 report that they were numerous over the greater part of the island at that time. This tribe of people was distinctive in having a pronounced Jewish cast of features. The men were above the average of aboriginal stature, and the tribe was considered peaceable.

On a recent visit to Hinchinbrook Island, an area that was evidently a favourite camping ground, was inspected. The spot must have been an ideal one from the native point of view. A lightly wooded and grass flat of some 30 to 40 acres was bounded on the north by a small fresh water stream and on the south by a spur of hills descending to the sea in Hinchinbrook Channel to form a high head-

land. In front was a sandy beach shelving gently into the Channel to a submerged coral bed some two hundred yards from the shore. Stony banks at the mouth of the creek were thickly studded with oysters and a small mangrove patch provided shelter for numerous fishes. Here the natives erected a stone fish trap, a simple stone wall ingeniously devised to catch the fish coming in with the rising tide to feed close inshore. The walls are roughly semi-circular in shape, extending from the beach to low water mark, about 100 yards out. Several bays are formed in the outer sweep of the wall and are connected with the main enclosure by narrow openings. The whole of the outer portion of the wall is built about a foot higher than the inshore ends and a dividing wall runs from the beach to the outer rim. The effective operation of the trap depends on the habit of feeding fish. As the tide rises fish follow the water in



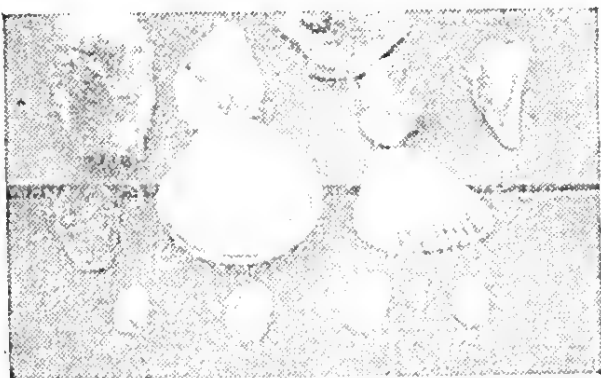
Portion of the outer wall of aboriginal fish trap on Hinchinbrook Island.

and feed along the beaches and shallows, then as the tide falls they make out again to deeper water. The rising tide first covers the inner ends of the trap walls, and the fish are able to move freely over them along the enclosed portion of the beach, but are hindered from moving straight through by the dividing wall. When the tide begins to fall the outer rim of the wall is first exposed and effectively bars the fish as they attempt to move straight out to the deep water. The bays in the wall more effectively prevent the escape of the fish, and the aboriginal was able to collect them at his leisure when the tide was low.

Although it must be now considerably over fifty years since the last aboriginal tended the trap, the walls are still in fair repair and are a tribute to the skilful native building. They present a fine exhibit of the manner in which the native has brought nature to his aid by cultivating the small rock

oyster to provide a living mortar for the stones. Fish is still caught in the trap and garnered daily by numbers of sea birds.

On the foreshore and at several spots along the banks of the stream the sites of old camps are denoted by mounds of shells, stones and ashes—the aboriginal kitchen middens. The largest of these evidently marking the main tribal camp, is situated just off the top of the beach about midway between the creek and the headland. It is about 120 feet in diameter and 3-feet high, and is composed entirely of shells, stones, ashes, and a few bones. The shells indicate that the aboriginal was partial to a range of shell fish not appreciated by the white race, for, in addition to two species of oyster (*Ostraea*) the following were found in considerable numbers: *Potamides* sp., *Meleagrina* sp., *Chione* spp., *Arca* sp., *Pinna* sp., and *Nerita* sp., whilst odd land snail shells (*Thersites pachystylis*) were also present. The bones collected from the midden included dugong (*Halicore dugong*), turtle (*Chelonia midas*), a tooth probably of wild pig, and small bones probably of animals such as the smaller marsupials.



Shells taken from kitchen middens.

Evidence of the aboriginal tool maker collected in the mound was a partly-shaped stone axe head, and piles of stone chips and flakes. The axe head was perfectly roughed out as may be seen in the plate, but the



Stone flake shaped for an axe head, and knives made from glass bottle.

clipping of the face produced a faulty crack which evidently caused the stone to be discarded.

Finished specimens of the tool-makers' art located in the mound were the glass knives also shown in the plate. These knives show great skill and delicacy of touch in the manner in which the glass has been flaked from each side to produce a straight cutting edge of razor sharpness.

Two other smaller mounds located on the creek, one on the north bank and the other on the south bank were respectively 35 ft. by 2ft. high and 60 ft. by 2ft high. Shells of the above species, stones and ash, were located in them.

A further mound containing only shells and ashes was located high up on the southern headland above a large exposed rock face. From this spot an extensive view of Hinchinbrook Channel, and the coastline for many miles is obtained. It appears reasonable to assume that the Hinchinbrook tribe maintained a look-out post at this spot to warn of any approachers to their domain.

MIGRATION OF LARVAL CRABS NEW GUINEA.

By MAURICE F. LEASK.

It was a day of glorious sunshine on 11th February, 1945, that we camped on the Raihu (Ailo) River at Rumble's Crossing, some two miles up from the sea. Almost two weeks ago the last heavy rain fell—5½ inches in one night—when Whittaker Bridge was washed away.

The Raihu at Rumble's Crossing is 70 yards wide from jungle to jungle. Water occupies only 30 yards, the remainder being shingle bank chiefly on the inside of the bend. Pebbles are mainly of fist size, consisting of diorite, porphyry, quartz and granodiorite.

The stream on most of this "reach" is in three main channels, with numerous log snags scattered around. Owing to its shallow depth, the water is remarkably warm.

It was on the West bank we noticed the larval crabs* swimming in a long shoal upstream. They were half an inch long, and in the clear water resembled half-grown tadpoles. A closer examination revealed that the shoal was apparently endless; it was followed for at least 30 yards upstream.

In general the tiny swimmers fol-

lowed the water's edge fairly closely. Where a backwater occurred they fairly shot forward in a streaming line. They clung to the outside of the turns, coming round in a graceful semicircle; then in a stretch of comparatively slow-flowing water, they spread out to its full width and swam up a little more slowly.

But when they came to the rapids, where some had been swept downstream, thousands were held up, and they piled up over the pebbles. Some were just in the water, some took to the land and crawled over half-dry pebbles. Upstream, ever upstream, they surged in a seething mass with a kind of "head" or front that was just making way.

* A note from the Australian Museum reads "The megalop or post-natant stage of some crab (Order Decapoda), probably a species of Sesarina. Representatives of this genus are plentiful along the streams of New Guinea, both along the shores and inland for quite long distances from permanent water. Very little is known of the larval stages of crabs, and a complete study of a life history on the spot is necessary before one can be certain of specific identity."

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Ahead of this front the shoal had extended, and where the water channel divided some shot forward again up a medium paced current, while others took the the rapids again. Here was a temporary slowing up, and many crabs were held up on a tiny crest or line of pebbles running across the stream. At this break they tried to make their way to the outer edges, there to proceed, following an irresistible urge to make the long journey, perhaps to the clayey land or the soaked swamps reaching down to the river banks.

On 4th March, 1945, three weeks later, the same spot was visited and the crabs were still there, making up-

stream as before. Considering it was three weeks later, and the river was in flood, flowing with muddy water almost from bank to bank, this was the more remarkable. Specimens were taken and preserved in methylated spirits and despatched for determination.

If anything the crabs were there in greater numbers—they could be picked up by the handful just like a swarm of bees could. At times when disturbed, they took to the land, where they progressed with a gait not quite typical of shore crabs in that it was not nearly so much a sideways progress.

EDIBLE PLANTS OF NORTH QUEENSLAND.

By H. FLECKER.

Continued

COMBRETACEAE :

132. *Terminalia Catappa* L., Indian Almond.
Kernels of nuts eaten as dessert. Excellent flavour.
133. *T. seriocarpa* F. Muell., Ngo-go-ro.
Fruit edible.
134. *T. platyphylla* F. Muell., Durin.
Ripe fruit eaten. (Palmer).
135. *Quisqualis indica* L.
In East Indies young shoots eaten raw or cooked.

MYRTACEAE :

136. *Eucalyptus terminalis* F. Muell., Long Fruited Bloodwood.
Leaves and small branches. Particles of sugar or gum fall off or are scraped off, pounded and roasted (Palmer).
137. *Psidium guajava* L., Native of Tropical America. White Guava.
Fruit eaten cooked or raw.
138. *Myrtus exaltata* Bail.
Fruit used for jam making (Cowley).
139. *Eugenia Smithii* Poir., Lilly Pilly.
Fruits edible.
140. *E. hemilampra* F. Muell.
Fruits fleshy, sharp acid flavour, useful for preserving (Bailey).
141. *E. cormiflora* F. Muell.
Fruit eaten raw.
142. *E. Tierneyana* F. Muell.
Red fruit makes good jam (Bailey).
143. *E. grandis* Wight, Waargoon-waargoon.
Fruit edible.
144. *E. suborbicularis* Benth., Pudginjacker.
Ripe fruit eaten (Bailey).
145. *E. Wilsonii* F. Muell.
Fruit used for jam making.
146. *E. Banksii* Britt. et Moore.
Fruit edible.
147. *E. Bungadinnia* Bail.
Fruits eaten.
148. *E. eucalyptoides* F. Muell.
Fruit used for jam making (Bailey).
149. *E. paniculata* Banks et Sol.
Fruit used for jam and wine making.

(To be Continued.)

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Vol. XII

CAIRNS, 1st SEPTEMBER, 1945

No. 76.

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Cairns Public School, Abbott Street, Cairns,
usually on second Tuesday in alternate months, at 8 p.m.

**ANNUAL GENERAL MEETING, TUESDAY,
11th SEPTEMBER, 1945.**

Election of Officers; Annual Report; Balance Sheet, etc.

MEETING OF CLUB

Tuesday, 10th July : Lecture by L.
J. Webb, C.S.I.R., "Drugs from North
Queensland Plants."

New Member Elected : Mr. H. E.
Tarr, 99 Wright Street, Middle Park,
Victoria.

DENDROBIUM BIFALCE Lindl.

(By the Rev. H. M. R. RUPP, Northbridge, N.S.W.)

C. T. White (Austr. Orch. Review, March, 1942, p. 4) includes this among Australian species of *Dendrobium* on the ground of its occurrence in the island of Saibai, which is "officially" part of Queensland. Geographically, however, Saibai is unquestionably a small satellite of New Guinea, being, as Mr. White says, comparatively speaking only a stone's throw from the mainland of Papua. On the map it may be seen very close to the most southerly part of the Western Division. Opinions therefore may differ as to the desirability of including Saibai in the botanical region of North Queensland. However, so far as *Dendrobium bifalce* is concerned, there can now be no question of demurring at its admission to the company of Australian Orchids. A plant with two racemes in full bloom has been forwarded to me by Dr. H. Flecker from Cairns. It was collected by Mr. R. L. Hunter in the Portland Roads area, in June, 1945.

D. bifalce was described by Lindley from imperfect specimens collected in Fiji, as far back as 1843. (Lond. Journ. Bot. II 1843, 237.) It has been found in other Polynesian and

Melanesian islands, and also in New Caledonia and New Guinea. So far as I can ascertain, Mr. Hunter's discovery constitutes the first record of it on the Australian continent. --As Lindley's description is neither easy of access nor very complete, I submit the following :—

Plant with shortly creeping and branching rhizomes. Pseudobulbs up to 30 cm high, slightly fusiform, strongly ribbed. Leaves two or three near the top of the pseudobulb, ovate-lanceolate, flexible, 14-19 cm long and up to 8 cm broad, with conspicuous longitudinal veins, very minutely and unequally emarginate at the tips. Racemes from between the leaves, terminal on very long stout jointed peduncles. Flowers 8 to 12, pale or yellowish green with dark purplish brown dots and splashes; pedicels long, bracts small, acutely triangular. Flower not exceeding 3 cm from apex of dorsal sepal to apex of labellum. Sepals ovate-triangular, the dorsal one about 10 mm long, the laterals slightly longer and much broader; spur very short and blunt. Petals lanceolate, about 10 mm long. Labellum relatively very large, very conspicuously

trilobate, lateral lobes horn-like, rather rigidly erect, linear-falcate, nearly 8 mm long; mid-lobe 10 mm long, or even longer, with a constriction 3 mm in front of the lateral lobes, the anterior portion then widely expanded, broader than long, softly fawn-coloured, with three darker median lines reaching to the depressed apex. Disc with a pure white papillose erection along the middle, representing the "raised lines" of other species, terminating beyond the lateral lobes in a widely bifid apex.

Column short and broad, set well back against the petals and dorsal sepal, and not embraced by the lateral lobes of the labellum.

Though the individual flowers are not large, the inflorescence as a whole is very attractive, and this plant is well worthy of cultivation. The very broad and protruding mid-lobe of the labellum is reminiscent of that of *D. Bairdianum* F. M. Bail. The horn-like lateral lobes are very distinctive indeed, and probably suggested Lindley's name.

PHALAEENOPSIS AMABILIS, BLUME

(By W. H. NICHOLLS, Melbourne.)

In the present paper I will endeavour to prove by words and figures, the true relationship of *Phalaenopsis amabilis* Blume (1) to the Australian *Ph. Rosenstromii* Bailey. (2).

In 1935 I received from Mr. A. Glindeman, the well-known collector and grower of Tropical Orchids, excellent material (both the plants and racemes of bloom) of "*Ph. Rosenstromii*," which he had brought back from Mt. Spec in North Queensland.

The following year I submitted a brief paper—under the title "Some rarer North Queensland Orchids," wherein the above forms were discussed. (This paper appeared in the July issue, p.p 37-39). Therein I stated, that Bailey's species was none other than Blume's *Ph. amabilis*, as (in my opinion), there was insufficient variation in the structure of the flower to warrant even varietal, let alone specific distinction.

Further material of both the exotic form and of Bailey's Queensland plant has now come to hand. in this instance from the Glass-houses of Mr. A. N. Burns, of Blackburn, Victoria.

Critical examination of this material has again convinced me, thus fully substantiating my former conclusion that this was but another instance of

the one species having masqueraded under two distinct titles (3).

Both the exotic plant (Hab:—Philippines; New Guinea, incl. Papua; Java, etc.), and the Australian *Ph. Rosenstromii*, (Hab.:—Daintree River; Mt. Spec; Mossman River) are subject to variation, chiefly in the details of the flower (see figures herewith).

In the "Proceedings of the Royal Society, South Australia" (Vol. xlix 1925, p. 265), Rogers refers to a Papuan form, e.g. variety *papuanus* Schlecht. ("Orch. Deutsch—Neu Guinea," 1914, p. 965) "which only appears to differ from the type form, in that the large bi-lobed callus near the base of the labellum is wider and not so high in the variety, and the gland of the pollinarium is larger and cordate-incised."

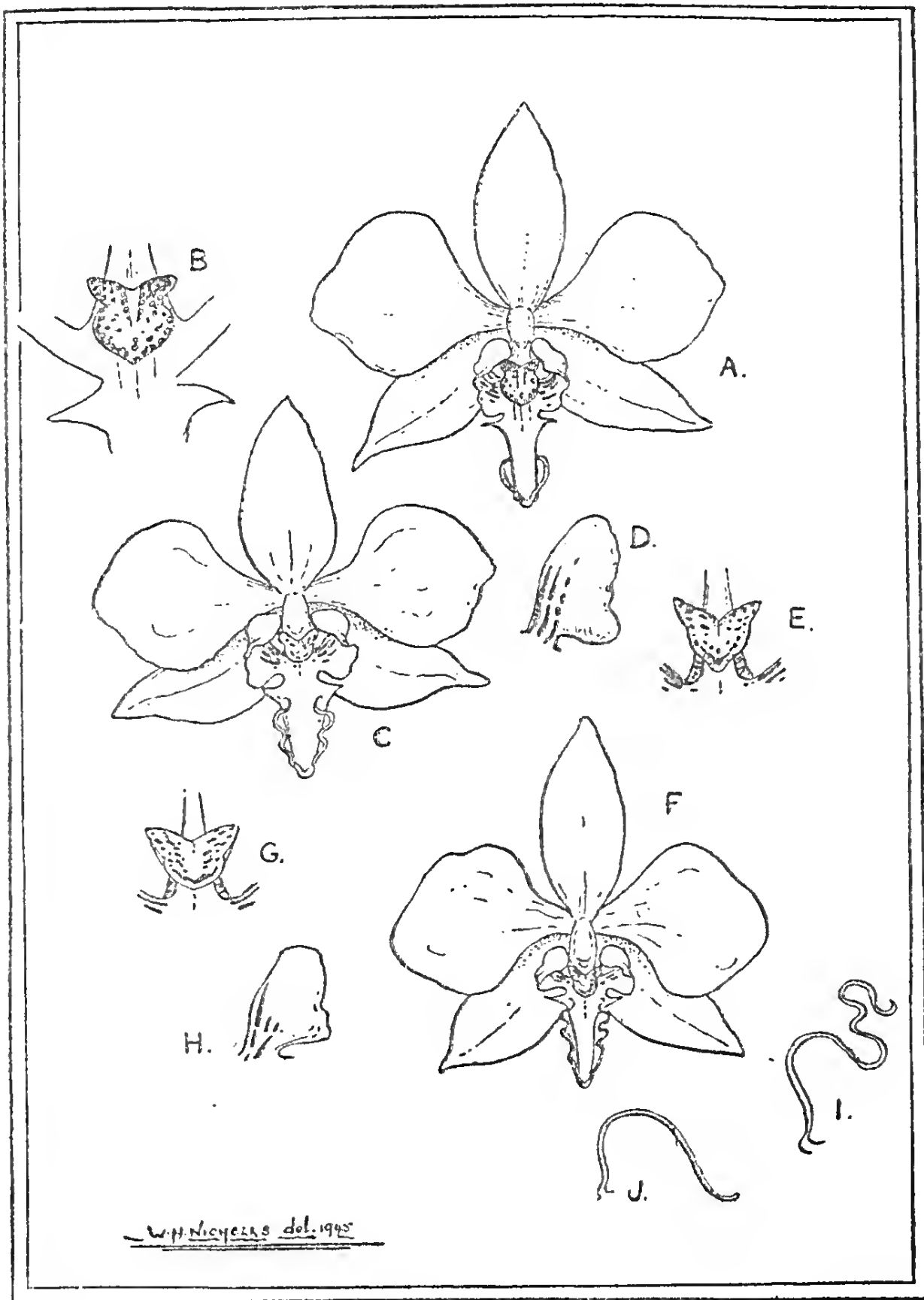
In the Mt. Spec flowers received in 1935, the labellum-lamina was of almost equal width throughout, also longer and wider at the apex than I have ever noted in exotic *Ph. amabilis* flowers. The "erect cirrhi" near the end merely falcate (Figure C.).

In Mr. Burns' flowers (which were excellently cultivated) a comparison was interesting. The outstanding feature of his *Ph. amabilis*' blooms was the conspicuously prominent labellum; whereas in Queensland "*Ph. Rosenstromii*," the labellum was noticeably small, the lateral petals appearing to have a dwarfing effect, though of the

(1.) Bijl. Flora Ned. Ind. (1825), 294, t. 44.

(2.) Q'land Agric. Journ., xvii, pt. 5 (1906), 231.

(3.) Listed under *Ph. amabilis*, Bl. in Checklist N. Qld. Orch. (Mar., 1945).



KEY TO FIGURES PHALAENOPSIS AMABILIS, BL.

- Figs. A. Flower from an Australian Plant (coll. Mt. Spee).
 B. Basal Callus from above.
 C. Flower from an Exotic Plant.
 D. Lateral Lobe of Labellum from above.
 E. Basal Callus from Flower (figure C.).

- F. Flower from Mr. Burns' Plant.
 G. Basal Callus from above.
 H. Lateral Lobe of Labellum of Flower (figure F.).
 I. Cirrhus from Labellum (Flowers figures C. and F.).
 J. Cirrhus from Labellum (Flower figure A.).

same size (almost) as in his exotic flowers.

The only other distinction revealed to me was in the shape of the labellum-lamina.

In his "*Ph. Rosenstromii*" it would best be described as narrow—linear; while this particular segment-part, in Mr. Burns' *amabilis*, was definitely euneate (as viewed from above). The

cirrhi in both flower forms long and nicely-twisted. (Fig. i.)

The slight differences noted in the shape of the labellum-lamina is, in my estimation, of little importance in view of the additional variation of this part previously referred to. Such degrees of variability may also be discerned in the form of the basal callus.

EDIBLE PLANTS OF NORTH QUEENSLAND.

By H. FLECKER.

Continued

LECYTHIDACEAE :

150. *Careya australis* F. Muell., Cocky Apple.
Fruit eaten when ripe (Palmer).

MELASTOMACEAE :

151. *Melastoma malabathricum* L.
Fruit edible.
152. *Tristemma virusanum* Com., Native of Madagascar.
Fruit edible.

RHAMNACEAE :

153. *Zizyphus Oenopia* Mill.
Fruit eaten. Pleasant acid flavour (Bailey).
154. *Z. mauritiana* Lam. Indian Jujube.
Fruit eaten by natives (Thozet).
155. *Dallachya vitiensis* F. Muell., Martilam.
Fruit eaten by natives (Thozet).

VITACEAE :

156. *Cissus trifolia* (L.) Dom. Lorwara.
Tubers roasted and eaten by natives. (Roth).
157. *Cayratia clematidea* (F. Muell.) Domin Morbir.
Tubers beaten on stones and roasted (Roth).
158. *C. opaca* F. Muell. Pepper-vine.
Fruit and tubers eaten raw (Thozet).
Fruit used for jam making (Miss Lovell).
Water obtained from stems.

OLACACEAE :

159. *Ximenia americana* L., Gotoobah.
Coat around hard seed-bearing part eaten (Seeds not eaten).
Young leaves cooked and eaten.

SANTALACEAE :

160. *Exocarpus latifolius* R. Br., Broad Ballart.
Succulent peduncle to which hard inedible fruit attached edible.
161. *E. cupressiformis* Labill., Cherry Ballart.
Succulent peduncle to which hard inedible fruit attached edible.

PROTEACEAE :

162. *Persoonia falcata* R. Br., Sickle-leaf Geebung.
Fruit eaten (Roth and Palmer). (To be Continued)

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No. 77

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at Cairns Public School, Abbott Street, Cairns,
usually on second Tuesday in alternate months, at 8 p.m.

Sunday, 14th October, 1945: Launch excursion to Michaelmas Cay, attended by 25 members, where the breeding of Terns was inspected.

Tuesday, 13th November 1945: Address by Dr. S. H. Blackburn, entitled *Reminiscences of a Globe Trotter*.

New Members Elected: Capt. J. H. Parry, 116 A.G.H., Jungara; Mr. Leslie Wright, City Council, Cairns; Mr. W. G. Hancock, Department Agriculture and

Stock, Bowen; Dr. J. H. Blackburn, Cairns; Mr. C. G. Martin, Green Island.

Excursion to be held Sunday, 9th December, to Wright's Creek. Rail motor leaves Cairns 9.20 a.m. Alight Edmonton, and proceed through Hambleton, returning in time for rail motor at 5.40 p.m.

Next Meeting, Tuesday, 8th January: Lecture by Capt. J. H. Parry, A.A.M.C. "Part Played by Microrrhiza in Plant Economy."

New Species of *Dendrobium* (Orchidaceae) from Babinda

(By the Rev. H. M. R. RUPP, Northbridge, N.S.W.)

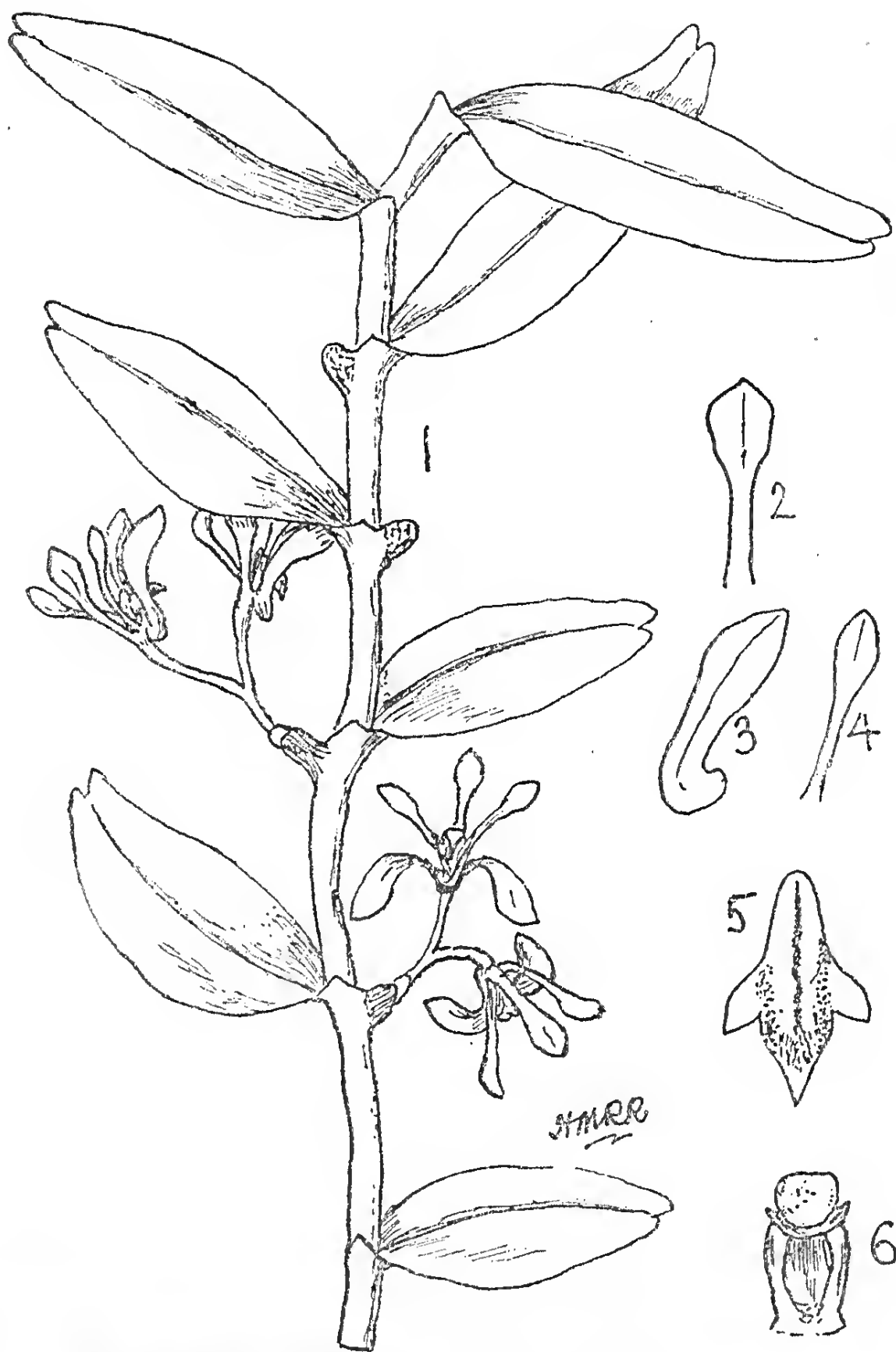
D. LUTEOCILUM, sp. nov.

Caules elongati, foliosi. Folia ovata vel late lanceolata, 4-6½ cm. longa, ad apices inaequaliter emarginata. Flores duo in racemis axillaribus, luteovirides, fugacii. Sepala petalaeque eireiter 12 mm. longa. Sepalum dorsale et petala angusta, fere remiformia: sepala lateralia multo latiora; calcar brevissimum. Labellum vix 7 mm. longum, 5 mm. trans partem latissimam, trilobatum: discus viridis cum linea elevata una, lobi laterales lutei, acuti, lobus intermedius cum ciliis luteis prope apicem acutum, sed apex ipse glaber. Columna crassa, anthera supra plana.

Stems elongate, leafy. Leaves ovate to broadly lanceolate, 4-6½ cm. long, unequally bidentate or emarginate at the tips. Flowers two in axillary racemes, yellowish-green, fugacious. Sepals and petals all about 12 mm. long. Dorsal sepal and petals narrow, lanceolate or almost paddle-shaped: lateral sepals much broader, forming a very short blunt spur with the base of the column. Labellum scarcely 7 mm. long, 5 mm. across its widest part, trilobate: disc green, with a single median raised line: lateral lobes yellowish, acute: mid-lobe with brownish markings, and near the apex a conspicuous patch of yellow cilia, but the apex itself quite glabrous, acute. Column stout, anther almost flat-topped.

Babinda, North Queensland,
26/10/1945: J. H. Wilkie.

Through the promptness of Dr. H. Flecker in despatching Mr. Wilkie's specimen by air from Cairns, I received it in good condition within 48 hours of its collection 1,500 miles away. After my first inspection I was inclined to think it might be identical with one of the New Guinea species of *Dendrobium* represented in the N.S.W. National Herbarium. An investigation next day showed affinities with *D. djamuense* Schltr., but the latter is a more slender plant with broader leaves, and very acute or acuminate floral segments. It would not be possible to place the Babinda plant in this species. New Guinea possesses so many species obviously belonging to the same section of the genus as Mr. Wilkie's plant, that it is not impossible for the latter to prove to be one of them. But it is not identical with any that I can trace through the National Herbarium collections and literature; therefore it seems to me justifiable to name and describe this plant, certainly new for Australia. It is by no means a showy species, but is interesting. It does not grow by Govt. Entomologist, any other Agric. and Stock, Brisbane named. It is determined by N.Q.N.C. the white, C. T., "Principles of Botany," p. 190.



DENDROBIUM LUTEOCILIMUM, n.sp.

KEY TO PLATE.

- 4.—A petal.
- 5.—Labellum from above.
- 6.—Column from the front.
- (2 to 6 much enlarged).

EDIBLE PLANTS OF NORTH QUEENSLAND.

By H. FLECKER.

Continued

163. *Macadamia Whelani* Bail.
Nuts used for food by natives after preparation. (Bailey).
164. *Helicia diversifolia* White.
Seed edible, pleasant flavour.
(*Hicksbeachia pinnatifida* F. Muell.
Nuts edible according to Bailey, but contain prussic acid and therefore poisonous.

RUBIACEAE :

165. *Sarcocephalus cordatus* Miq., Cheesewood.
Fruit eaten (Roth).
166. *Randia Fitzalanii* F. Muell., Papajarin.
Fruit eaten raw (Roth).
167. *Merinda citrifolia* L., Ko-on-je-rung.
Young leaves and young fruit eaten raw or cooked.

PASSIFLORACEAE :

168. *Passiflora foetida* L., native of Brazil.
Fruit edible.
169. *P. edulis* Sims. Passion Fruit; typical Perga structure (Fig. 1, C),
Edible fruit, well-known.
170. *P. quadrangularis* L., Granadilla. Native of South America.
Inside of fruit edible.
Thick outer wall stewed. Excellent.
171. *Carica Papaya* L., Papaw.
Fruit edible.

CUCURBITACEAE :

172. *Lagenaria leucantha* Rusby. Battle Gourd.
Young fruit eaten as vegetables.
Young leaves steamed, eaten in Dutch Indies.
173. *Momordica Charantia* L., Balsam Vine. Native of Tropical Asia.
Young leaves and fruits eaten as greens (better mixed with other plant materials) after soaking in water.
Fruits cooked and eaten.
Seeds when sucked have sweet flavour and used in curries.
174. *Citrullus vulgaris* Schrad. Water Melon. Native of Tropical Africa. Fruit well-known.
175. *Cucurbita Pepo* L., Pumpkin. Native probably of Tropical America.
Fruit well-known.

COMPOSITAE :

176. *Vernonia cinerea* (L.) Less., Vernonia.
In Dutch Indies, steamed leaves eaten.
177. *Blumea lacera* (Burm. f.) DC., Batard.
In East Indies young shoots steamed and eaten.
178. *Pluchea indica* Less., Onogona.
Young leaves, tips of branches and young flowers cooked and eaten.
179. *Cosmos caudatus* H.B. Kt., Native of West Indies.
In East Indies young leaves and tops eaten raw or cooked.
180. *Bidens pilosa* L., Cobbler's Pegs.
In East Indies young shoots eaten raw or steamed.
181. *Galinsoga parviflora* Cav., Native of South America. Potato-weed.
In East Indies young tops steamed and eaten.
182. *Erechtites valerianifolia* DC. Federal Weed. Native of South America.
Tender parts cooked and eaten as greens.
183. *Emilia sonchifolia* DC.
Whole plant eaten raw or cooked.
184. *Sonchus oleraceus* L., Sow Thistle.
In Dutch Indies, young shoots and leaves eaten. by Govt. Entomologist, Agric. and Stock, Brisbane.

CAMPANULACEAE :

185. *Wahlenbergia gracilis* DC., Australia, determined by N.Q.N.C.
Flowers eaten raw. *White, C. T., "Principles of Botany," p. 190.*

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GENTIANACEAE:

186. *Limanthemum crenatum* F. Muell., Wavy Marshwort.
Tubers roasted for food by natives. (Palmer).

MYRSINACEAE:

187. *Rapanea subsessilis* (R.Br.) Mez., Marada.
Fruit edible.

SAPOTACEAE:

188. *Lucuma galatoxylon* F. Muell., Red Silkwood.
Fruit very sweet.
189. *L. castanosperma* White et Francis, Milky Plum.
Fruit edible.
190. *Sideroxylon euphlebiu* F. Muell.
Fruit edible, pleasant flavour.
191. *S. australe* B. et H., Black Apple.
Fruit edible (Q.A.J., Feb. 1923, p. 80).
192. *S. dugulla* Bail., Dugulla Bail., Dugulla.
Fruit eaten by natives. Pulp of oily nature (Cowley).
193. *Mimusops Browniana* Benth., Wongi.
Fruit eaten raw.

EBENACEAE:

194. *Maba sericarpa* F. Muell.
Fruit eaten by natives. (Bailey).
195. *M. rufa* Labill.
Fruit eaten by natives. (Bailey).
196. *M. hemicycloides* F. Muell.
Fruit eaten by natives. (Bailey).
197. *M. compacta* R. Br.
Fruit eaten by natives. (Bailey).
198. *M. reticulata* R. Br.
Fruit eaten by natives. (Bailey).
199. *M. geminata* R. Br.
Fruit eaten by natives. (Bailey).
200. *M. humilis* R. Br., Queensland Ebony.
Fruit eaten by natives. (Bailey).

APOCYNACEAE:

201. *Chilocarpus australis* F. Muell., Palamara.
Fruit eaten by natives. (Bailey).
202. *Trichostemanthemum Bacellianum* Domin.
Pulp of fruit edible, sweet.
203. *Carissa ovata* R. Br., Kunkerberry.
Fruit eaten raw (Palmer).
(var. *stolonifera* Bail., poisonous according to Bailey).

ASCLEPIADACEAE:

204. *Cynanchum floribundum* R. Br., Theoramia.
Pods and leaves full of milk, eaten raw when young (Palmer).
205. *Microstemma tuberosum* R. Br., Warabocga.
Tuber eaten roasted or raw. (Roth).

Published by N.Q. Naturalists' Club.

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of Cairns Area. Price 1/-.

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NORTH QUEENSLAND NATURALISTS' CLUB

Meets at School of Arts, Shields Street, Cairns.
usually on second Tuesday in alternate months, at 8 p.m.

Next Meeting, Tuesday, 12th March.

Lecture by Mr. Herbert V. Chargois, F.R.P.S., "Nature Photography."

MEETINGS AND EXCURSIONS

Sunday, 9th Dec., 1945: Excursion to Wright's Creek. Attendance 8.

Tuesday, 8th Jan., 1946: Lecture by Capt. J. H. Parry, A.A.M.C., "Part Played by Microrrhiza in Plant Economy."

Sunday, 3rd Feb., 1946: Excursion to Pease Panorama. Attendance 17.

New Members Elected: Mr. Reg. Rees, 163 McLeod St., Cairns; Mr. and Mrs. Sheehan, Edge Hill; Miss I. Parker, Intermediate School, Cairns; Mr. and Mrs. A. Gray, National Bank Chambers, Cairns; Mr. and Mrs. T. F. Webb, Hides Hotel, Cairns; Mr. A. Atkinson, Esplanade, Cairns.

New Food-Plant of Saw Flies (Hymenoptera, Tenthredinidae)

(By MAURICE F. LEASK, Member F.N.C.V. and N.Q.N.C.)

The family of saw-flies, in other parts of the world, in the larval stage feed on a variety of plants, including species of *Hicoria*, *Quercus*, *Sambucus*, *Rubus*, *Salix* and *Betula*.

"It is somewhat remarkable that in every country (except Australia) where these insects are well represented in the fauna that they have become more or less pests upon cultivated trees and plants." (1) In other countries, then, these insects feed upon the leaves of the pear, quince and plum, as well as on the stems of small grains.

Among Australian saw-flies, of which the dominant genus is *Perga*, it has been established that *Eucalypts* constitute the food-plant of the majority of species.

The larvae of *Perga dorsalis* (Leach) have been recorded feeding on *Eucalyptus nova-anglia*, *E. gummifera* (Bloodwood), *E. camuldulensis* (River Red Gum), *E. obtusiflora* and *E. citriodora*.

On the other hand, one species of plant may serve as a host for numerous species of saw-flies: this is the case with *E. gummifera*, which is the food-plant of *Perga dorsalis*, *P. Lewisii*, *Perisagrapta divaricata* and *P. spinolae*.

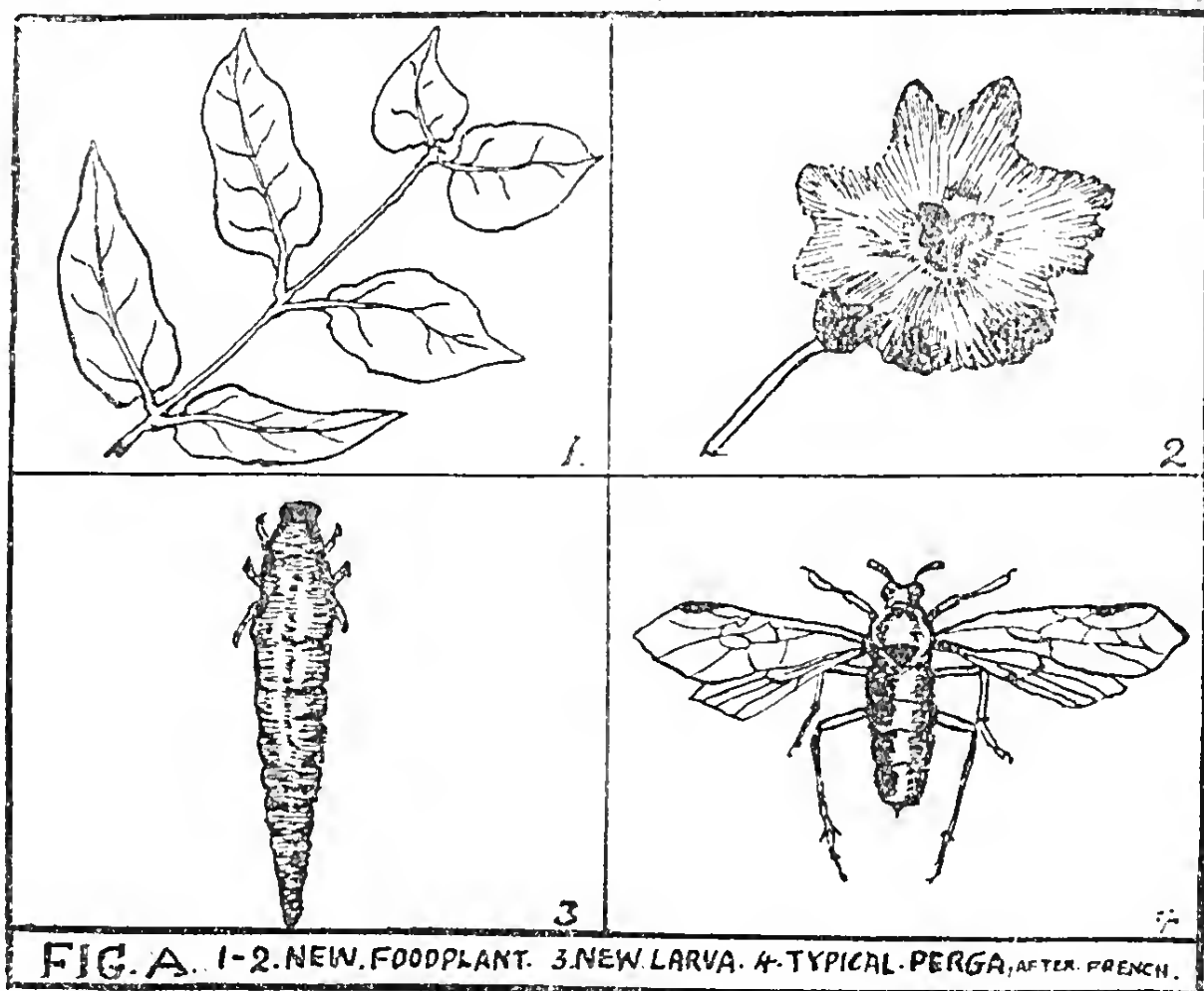
Other plants recorded as hosts in Australia are *Leptospermum*, *Melaleuca* and *Rubus* (2). From the other domin-

ant genus of Australian trees, *Acacias*, only adult specimens of saw-flies (*Neocurys* sp.) have been described, these being found on the flowers.

This description records for the first time that larvae of one of the *Pergas*, (3) feed on an entirely new food-plant, *Synearpia procera* (Salisb.), Domin, of the family *Lauraceae*, and known as the "Turpentine" (4). These trees occur typically mixed with *Casuarinas*, and there are *Bloodwoods* in the neighbourhood. "*Synearpia* is characterised by the flowers being in heads (Fig. A. 1.). Three species occur in Queensland." (5).

In several different areas north and south of Spring Creek, Wondecla, North Queensland, at an altitude of 3,100 feet (average), these larvae were observed on the suckers (Fig. A. 1.) of *Turpentine*.

- (1) Froggatt, W. W., "Agricultural Gazette of N.S.W.," Vol. XII.
- (2) Leask, M. F., "Records of Two Sawflies," N.Q.N., Vol. XI, No. 69, 1st Sep., 1943.
- (3) Determined by Govt. Entomologist, Dept. of Agric. and Stock, Brisbane.
- (4) Determined by N.Q.N.C.
- (5) White, C. T., "Principles of Botany," p. 190.



The first specimens, well-grown grubs, were seen on 25th June, 1944; others were on the plants until 27th September, 1944.

Some entered the soil to pupate on 2nd July, 1944, others on 13th July, 1944, and the latest on 27th September, 1944.

The adults emerged.

Some Tachinid parasites (Diptera) emerged from others of these larvae.

Several characteristics make the larvae of this as yet undetermined species of *Perga* or *Pergagraptia* unique; they are the first grubs I have encountered that exude a BRIGHT ORANGE exudation, as distinct from the yellow spittle of species feeding on Eucalypts.

The stems of *Syneorpha* suckers are red; the undercheests of the larvae are orange. This is the most pronounced coloration yet seen on saw-fly larvae.

All members of the bunch enter the ground simultaneously, but make separate cocoons, preferring the gravelly soil for this purpose, although a choice of soil was offered in the cage.

The larvae do not drop off the plant when it is disturbed. They are of typical *Perga* structure (Fig. A, 3.), medium-sized, and smaller than *Perga dorsalis*.

Breeding of these imagines (Fig. A, 4), was made possible by the co-operation of Mr. A. R. Brimblecombe, Department of Agriculture and Stock, Brisbane. The adults have not yet emerged (6.3.46).

A New Orchid Genus and Species from North Queensland.

By the Rev. H. M. R. RUPP, Northbridge, N.S.W.

MOBILABIUM, n. gen.

Plantae epiphyticae, parvae, *Sarcanthi tridentati* habitu. Radices serpentes vel saepius aërii, aliquantum crassi. Caules solitarii, elongati, articulati, cum bracteis appressis. Folia usque ad 7, late

linearia marginibus reflexis, ad apices recurva. Racemi moderate numerosi, diu pertinaces, plerumque breviores quam folia. Flores usque ad 12, parvissimi. Sepala petalaeque ad columnae pedem affixa, aequilonga, patentia, lanceolata

sed vix acuta: petala paulum angustiora quam sepala. Labellum saccatum, mobile in unguem brevem ad columnae pedis basem affixum, trilobatum. Lobi laterales plus minusve triangulares, erecti vel saepe reflexi: lobus intermedius minutissimus vel fere obsoletus. Saccus obtusissimus, intus callis duobus (?) multo sub foramine. Columna multo proflexa: rostellum breve, bifidum: anthera bilocularis, rostrata. Pollinia 2, fere globosa. Small epiphytes resembling in habit *Sarcanthus tridentatus*. Roots creeping or more often aerial, rather thick. Stems solitary, elongate, jointed, much covered with appressed bracts. Leaves up to 7, broad-linear with recurved margins, reflexed at their apices. Racemes several, long persistent, usually shorter than the leaves. Flowers up to 12, very small. Sepals and petals attached to the column-foot, equal in length, spreading, lanceolate but hardly ever acute; petals a little narrower than the sepals. Labellum saccate, mobile on a short claw attached to the base of the column-foot, trilobate. Lateral lobes more or less irregularly triangular, erect or often reflexed: intermediate lobe very diminutive or almost obsolete. Sac very obtuse, with two (?) calli inside much below the orifice. Column much bent forward: rostellum short, bifid: anther two-celled, beaked. Pollinia 2, almost globose.

M. hamatum, n. sp.

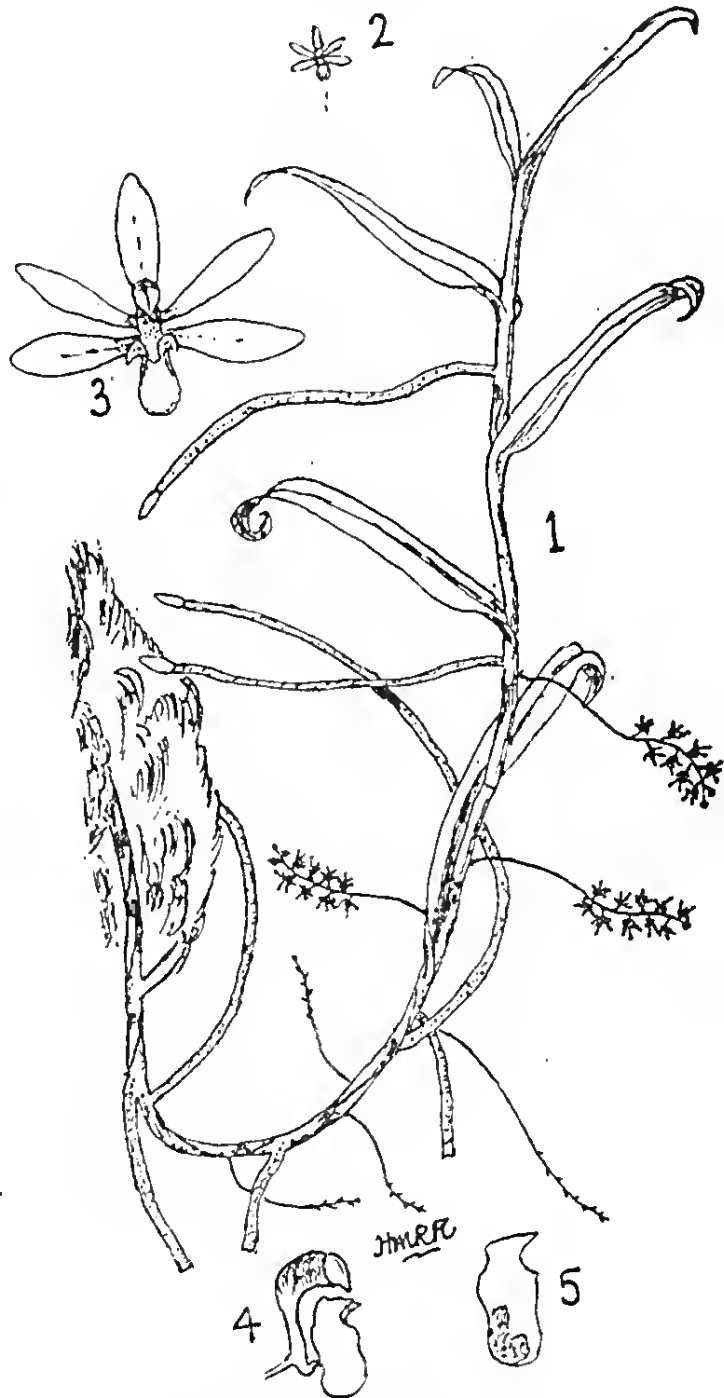
Species generis proprietatibus. Planta usque ad 35 cm longa. Folia 4-7 cm longa, rigida, ad apices hamata vel interdum revoluta. Flores fuscovirides maculis rubris. Sepala petalaeque circiter 3 cm longa, paulum incurva. Labelli lobi laterales acute sed inaequaliter triangulares, plus minusve maculati, plerumque recurvi (saltem in speciminibus meis.) Columna sub flexu maculata: stigma aliquantum obscurum.

Species with the general characteristics of the genus. Plant up to 35 cm long. Leaves 4-7 cm long, rigid, at their apices hooked or even revolute. Flowers brownish and green with red markings. Sepals and petals about 3 cm long, a little incurved. Lateral lobes of the labellum acutely but very irregularly triangular, more or less spotted, usually somewhat recurved (at least in my specimens.) Column spotted below the bend: stigma rather obscure.

ATHERTON TABLELAND AREA, N.Q.
MAY, 1943, R. HUNT

In June, 1943, Mr. T. E. Hunt of Ipswich, South Queensland, sent me specimens of a number of orchids collected by his brother, then serving in the A.I.F., within the Atherton Tableland area. Amongst them, the plant which is the subject of the above descriptions at once

arrested my attention by its distinctive appearance. It was not flowering; but although in its general habit it bore some resemblance to *Sarcanthus tridentatus* (Lindl.) Rupp, the narrow, rigid,



Mobilabium hamatum
n. gen. et sp.

KEY TO PLATE

1. Plant, about half natural size.
2. Flower, natural size.
3. Flower much enlarged.
4. Column and labellum from the side, showing the claw of attachment. Much enlarged.
5. Interior of labellum sac from the side showing what appear to be 2 calli near the bottom. Much enlarged.

"hooked" leaves suggested something as yet undescribed. The small plant sent to me failed to survive, as did a still smaller one subsequently received through Dr. H. Flecker from the same area. But Mr. T. E. Hunt succeeded in cultivating the larger plant which he had wisely retained, and towards the end of July 1945, several racemes began to open their flowers. In August a flowering raceme was forwarded to me, but although it was well packed and not unduly delayed, the diminutive flowers had so wilted that I could make no satisfactory examination of the details. Unfortunately Mr. Hunt had then left home for a holiday; but before leaving he had put the flowers from two racemes into a preserving solution, and these he sent to me as soon as he returned. After examining several, I sent a few to Mr. W. H. Nicholls of Melbourne for his opinion. We agreed that the orchid was undoubtedly a new species, but were both doubtful about the genus. Mr. Nicholls suggested with some hesitation that the plant might be regarded as a *Saccolabium* and in this opinion I was at the time disposed to concur. It certainly seems nearer to *Saccolabium* than to any other genus in the Sarcanthinac. The plant itself is more like a *Sarcanthus*; but if we are to accept (as I do without hesitation myself,) J. J. Smith's views on the distinctions between *Sarcanthus* and allied genera, our present plant is definitely excluded from the genus, for there is no trace of a callus at the orifice of the labial sac. Extended study of the flowers provided by Mr. Hunt has finally convinced me that this little orchid will not fit into any genus of the Sarcanthinae of which I have been able to obtain descriptions, and that a new genus is required to accommodate it. The outstan-

ding reason for this conclusion is to be found in the fact that the labellum is neither sessile on, nor adnate to, the column-foot; but is freely mobile on a short claw connecting it with the basal extremity of the foot. On this claw it can be turned upside down and back again without any damage. Therefore I venture to make the plant the type of a new genus to be named *MOBILABIUM*, and I have given it the specific name *hamatum* in allusion to the hooked leaves, which are always prominently recurved, and in some cases even revolute.

I am not fully satisfied in regard to the calli which I have described as situated near the bottom of the interior of the labial sac. It is extremely difficult to bisect cleanly such a diminutive object, and the difficulty is increased when working with flowers preserved in a solution. Ultimately it may be found that there is a single bilobate callus: or it may even transpire that I have mistaken for calli what are merely lobed discolorations, or some distortions of the substances of the wall of the sac. Discoveries of such mistakes, however, would in no way affect the distinctiveness of the connection between labellum and column-foot. In all specimens examined, the stigma is so obscure that I have not attempted to define its form.

It will be clear from what I have said above that most of the credit for introducing this "new" orchid to the botanical public is due to Mr. T. E. Hunt of Ipswich, who has provided the material for examination, and who has also greatly helped me by forwarding an admirable pencil sketch of his plant, and by giving in full detail his own impressions of the characteristics of a living flower.

EDIBLE PLANTS OF NORTH QUEENSLAND.

By H. FLECKER.

Continued

CONVOLVULACEAE:

206. *Ipomoea Batatas* Lam., Sweet Potato. Native of America.
Tubers eaten raw or cooked.
Young shoots substitute for spinach.
207. *I. Pes-caprae* Roth, Goat's-foot Convolvulus.
Roots eaten after being baked and hammered on stones. (Roth.)
208. *I. reptans* Poir.
Said to be cultivated as vegetable by Cingalese. (Bailey)
209. *I. gracilis* R. Br., Almor-ira.
Roots roasted and eaten. (Roth)

SOLANACEAE:

210. *Lycopersicum esculentum* Mill., Tomato., Native of South America.
Fruit eaten raw or cooked. Well known.

Published by N.Q. Naturalists' Club.

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NATIONAL MUSEUM
2 JUL 1946

The North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. XIII

CAIRNS, 1st JUNE, 1946.

No. 79

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at School of Arts, Shields Street, Cairns.
usually on second Tuesday in alternate months, at 8 p.m.

Next Meeting Tuesday, 9th July, 1946.

MEETING AND EXCURSIONS

A rail motor is being chartered for Saturday to Monday, June 15-17 (Monday is a Public Holiday) to Chillagoe and Mungana. Accommodation limited to 50. and priority given to club members. Fare 11/3.

12th March: Lecture by H. V. Char-
gois, F.R.P.S., "Nature Photography."

New Members March Meeting: Mr. A.
G. D. Austin, Cairns District Hospital;
Mr. K. Carey, care Messrs. Cummins
and Campbell, Cairns; Mr. C. R.
Hunter, Mareeba; Mrs. E. M. Camp-

bell, Madeleine Street, Hunter's Hill,
N.S.W.; Mr. V. Vlasoff, 64 Sheridan
Street, Cairns.

5th May: Excursion to Wright's Creek.
Attendance 16.

5th May: Excursion to Goldsborough
Track, Upper Mulgrave River. Attend-
ance 24.

13th May. Lecture by K. Carey.
"Breeding of Budgerigali and Study of
Genetics."

New Members elected: Mrs. L. Archi-
bald, Edge Hill; Mrs. G. Stephens,
Edge Hill; Mr. A. Garner, Atherton.

AN ABORIGINAL FISH TRAP.

(S. E. STEPHENS, Cairns.)

A recent visit to Hinchinbrook Island has enabled a more detailed study and the preparation of accurate data concerning the Stone Fish Trap mentioned in the paper published in Vol. XII, No. 75, of the N.Q. Naturalist.

The trap is located on a stony point extending from the eastern bank of the mouth of Page Creek into Hinchinbrook Channel. The main portion of the trap fronts the open beach east of the creek. In this direction the stony point falls away towards the south-east in several stony ridges separated by deeper muddy channels or gutters. The accompanying diagram shows the location of the trap in relation to the creek and the ground formation, and gives a scale plan of the structure.

The main portion of the trap is the section ABCDEF, which encloses the area of deepest water when the tide

commences falling. The section FGHJ is only an intermittent row of stones along the top of the stony point to keep fish from breaking across the shallow water into the creek. XY is the main diversionary wall from the beach to the mouth of the enclosure, whilst KL is a small secondary diversion wall to direct the fish from the shallow section near the creek bank towards the deep water in the main enclosure. Its function appears to be the limiting of free movement across the shallow water towards point Y, where some break back and escape through the gap YA might occur.

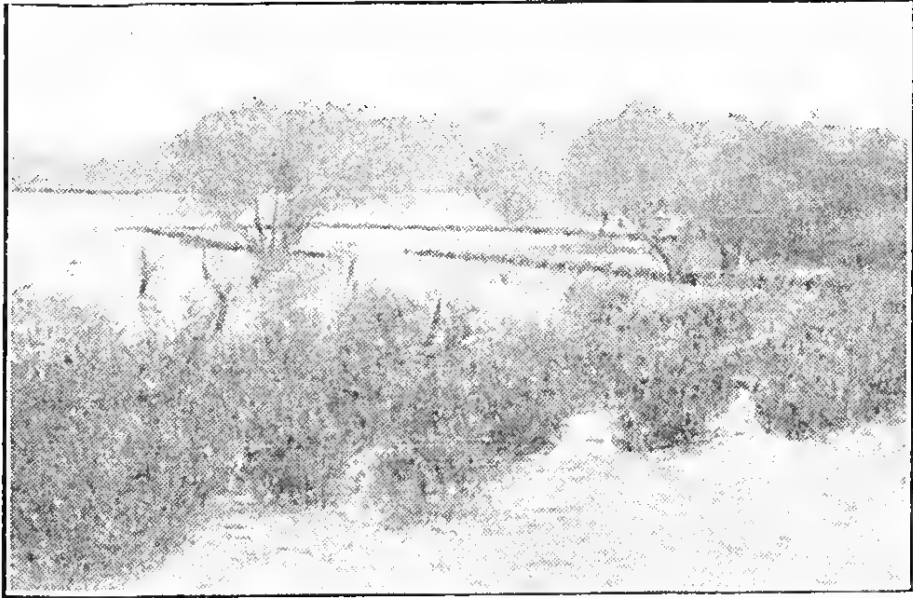
The bay BC in the deepest corner of the enclosure was the natural congregating point for the fish as the tide receded and thus simplified the task

The gross length of the trap from the beach at X to the back of the bay BC is 207 feet and the greatest width

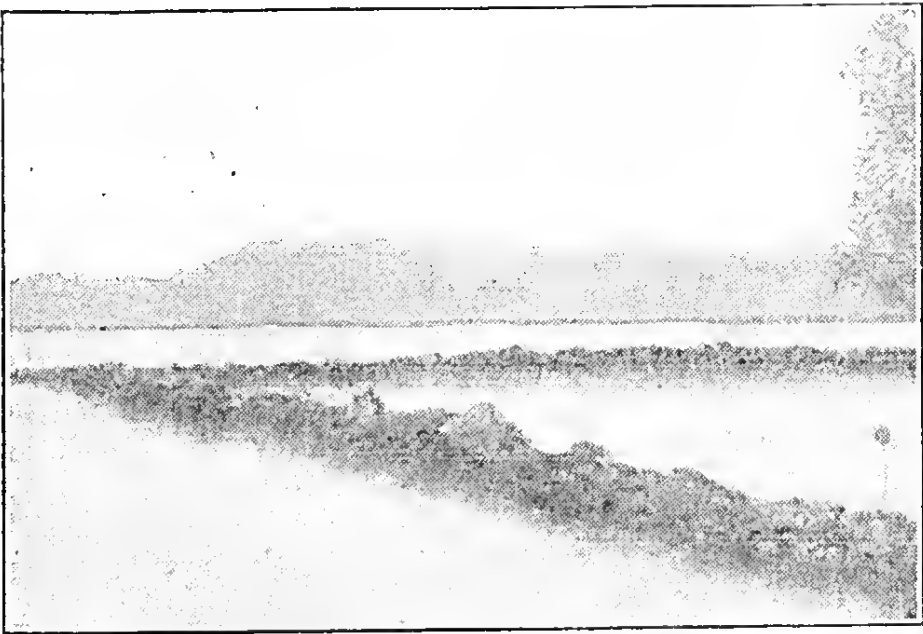
THE NORTH QUEENSLAND NATURALIST.

of the main enclosure is 80 feet. The walls vary in height, according to the contour of the ground from 18 inches at A to 3 feet at the bay BC, and then gradually diminishing to 21 inches at D, 18 inches at E and only about 6

20 years ago to permit the erection of a wire fish trap by a licensed fisherman. Many stones were taken from the walls to hold down the bottom of the wire and to build walls for the wings. Happily the wire and stakes have long since



Stone-walled fish trap at half-tide. Bandjin Tribe, Hinchinbrook Island.

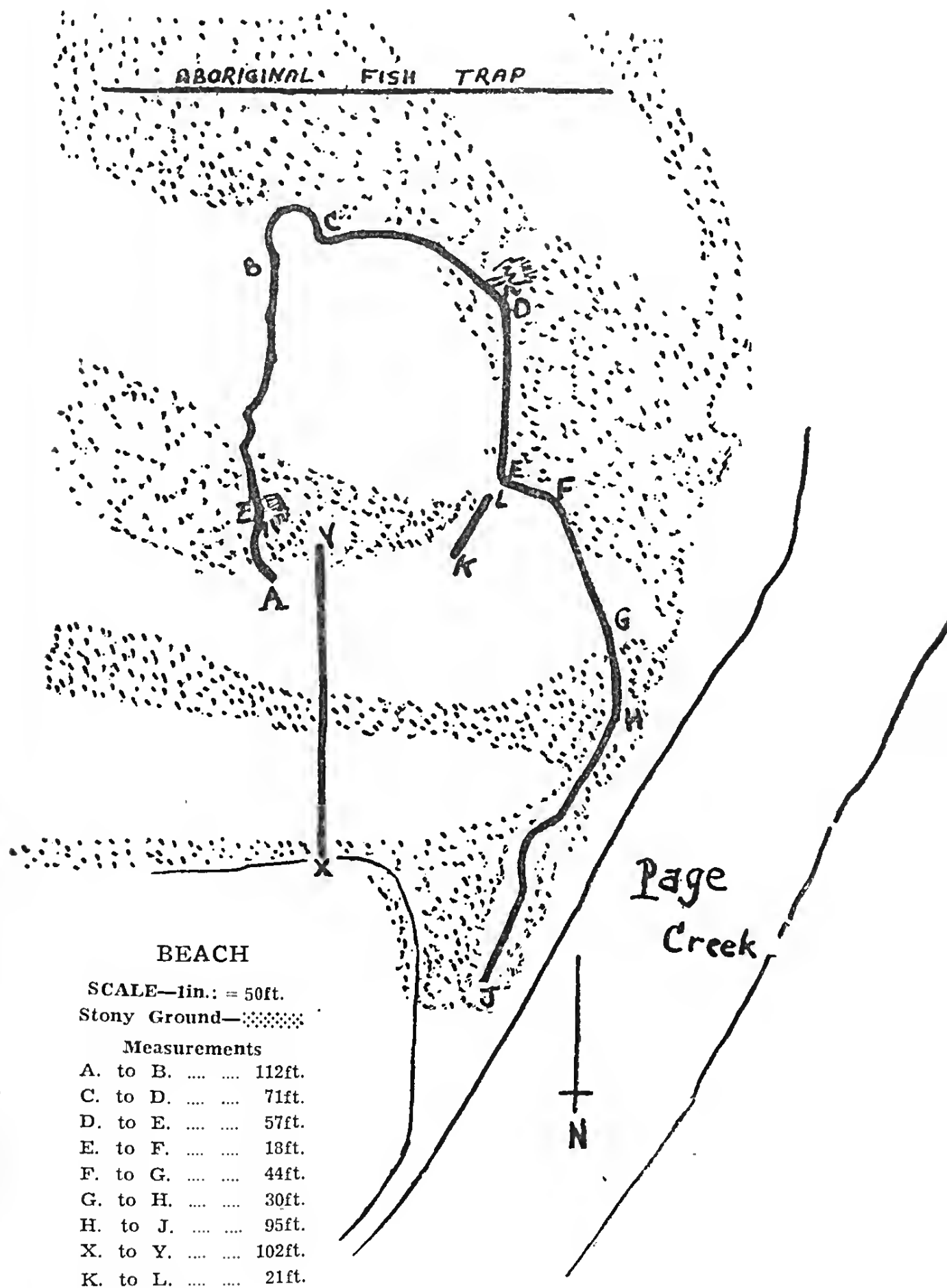


Portion of the walls illustrating the living mortar of rock oysters used to cement the stones.

inches along the section GHJ. The main diversionary wall varies from 15 inches to 2 feet high throughout its length and the secondary wall 15 inches.

The main enclosure was breached in two places and much of the secondary diversionary wall broken down some

disappeared, and efforts have lately been made to restore the original aboriginal structure to some extent by closing the gaps and reassembling the stones of the small wall. Undoubtedly, however, the walls are now all somewhat less in stature than they were as originally built.



Diameter of Bay B. to C. 10ft.

EDIBLE PLANTS OF NORTH QUEENSLAND.

By H. FLECKER.

Continued

SOLANACEAE :

211. *Solanum nigrum* A. Br. et Bouche, Black-berried Nightshade.
Young leafy shoots make excellent greens when cooked.
Fruit edible, but children at times "made very ill from eating them."
(Bailey).
212. *S. aviculare* Forst., Kangaroo Apple.
Fruit eaten (Hyam).
213. *S. verbascifolium* L., Potato-tree.
Fruit said to be used in curries in India (Bailey).
214. *S. esuriale*, Lindl., Quena.
Fruit eaten raw or roasted.
215. *Physalis peruviana* L., Cape Gooseberry. Native of South America.
Fruit edible and suitable for jam making.
216. *P. minima* L., Neen-gwan.
Fruit edible.
217. *Cyphomandra betacea* Sendtn., Tree Tomato. Native of Mexico.
Fruit edible.
218. *Capsicum fastigiatum* Blume. Chilli. Native of America.
Fruit used as spice.

BIGNONIACEAE :

219. *Parmentiera edulis* DC., Quahxilote, Native of Mexico.
Fruit edible.

ACANTHACEAE :

220. *Ruellia acaulis* R. Br.
Tuberous roots used as food (Bailey).

LABIATAE :

221. *Ocimum sanctum* L., Sacred Balm.
Leaves crushed in water make good substitute for tea.
222. *O. basilicum* L. Native of Tropical Asia.
Used as flavouring.

VERBENACEAE :

223. *Vitex glabrata* R. Br., Ko-na-ru.
Fruit edible.
224. *Faradaya splendida* F. Muell.
Fruit edible.
225. *Clerodendron inerme* R. Br., Ta-anji.
Fruit eaten (Roth).
226. *Avicennia officinalis* L., Grey mangrove.
Fruit eaten after being roasted (Thozet and Roth).

BORAGINACEAE :

227. *Ehretia acuminata* R. Br., Koda Tree.
Ripe fruit eaten. Insipidly sweet. (Q.A.J., Oct. 1921, p. 271).
Green fruit pickled.
228. *Cordia subcordata* Lam.
Small nuts edible.
229. *C. dichotoma* Forst. f., Sebastan.
Kernels of nuts eaten in India. Said to taste like filberts.
230. *Tournefortia argentea* L. f.
Leaves eaten raw.

(Continued)

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North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. XIV

CAIRNS, 1st SEPTEMBER, 1946.

No. 80

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at School of Arts, Shields Street, Cairns.
usually on second Tuesday in alternate months, at 8 p.m.

Annual General Meeting, Tuesday, 10th September, 1946.
Annual Report, Balance Sheet, Election of Officers.

MEETINGS AND EXCURSIONS

June 15-17: Excursion to Chillagoe and Mungana. Description on p. 7.

9th July: General Meeting. Lecture by E. W. Priest. Reclamation of Desert as exemplified at Broken Hill and Mildura.

New Members elected: Mr. and Mrs. Giraud; 147 Esplanade, Cairns; Mr. Holdercroft, care Chandler's Ltd., Cairns; Mrs. May, Esplanade, Cairns.

23th July: Lower Stoney Creek, via Kamerunga Crossing. Attendance, 20.

31st August: Pine Creek.

29th September: Mossman Gorge.

27th October: Fitzroy Island.

24th November: Fishery Falls.

27th December: Behana Creeks.

Will those wishing to take part in excursions please communicate with President or Hon. Secretary of the Club.

A Ceremonial Ground of the Wakamen Tribe

By S. E. STEPHENS

Whilst prospecting in the vicinity of Gurrumba some ten years ago Messrs. G. B. Stephens and A. Willoughby encountered a bora ring in good preservation on the summit of Iron Mountain. The existence of the ring was reported to the writer late in 1945 and arrangements were made to visit the area and record it. The visit was made during Easter of 1946.

Iron Mountain is the highest mountain in the area, rising to 2907 feet, and being some 700 feet above the level of the surrounding valleys. The mountain is conical on three sides but on the northern side a spur runs from the summit to a minor peak some five or six hundred yards distant and about one hundred feet lower. The tops of both the major and minor peaks are very limited in area and the connecting ridge is a rocky razor back only sufficiently wide on the top for a single track.

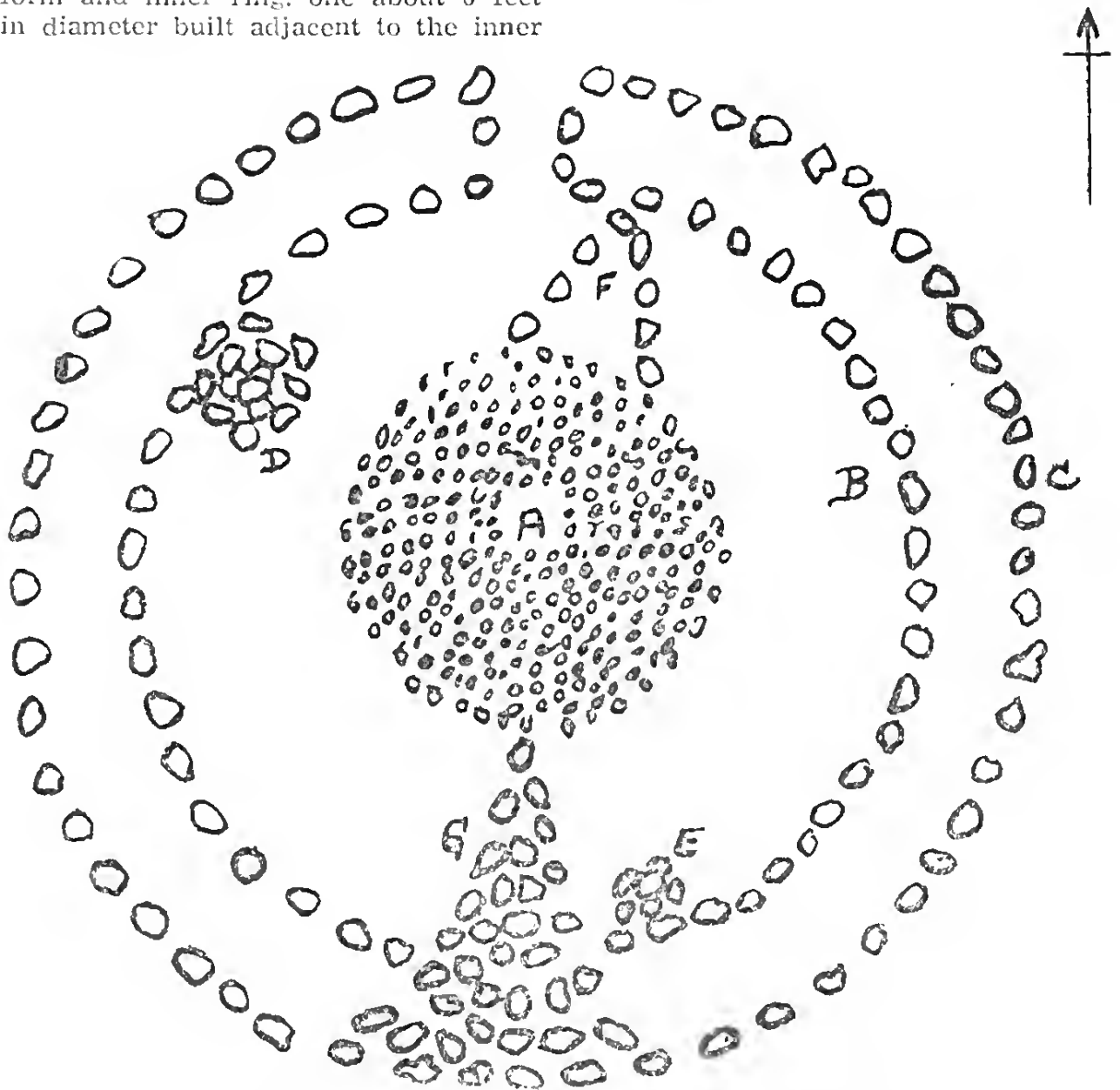
The examination of the mountain top disclosed that during the war period a trigonometrical survey disc had

been erected in the centre of the bora ring, and that most of the stones of which the ring had been formed had been displaced and used to anchor the disc supports. The spirit of destructiveness that seemed to pervade the military forces has almost completely obliterated what must have been a very well preserved ring.

Piecing together the meagre traces still remaining it appears that the ground was enclosed by a double ring of stones, the diameter of the outer ring being 34 feet and of the inner ring 26 feet. A narrow opening into the centre of the ground was left through the rings on the northern side so that it could be entered by way of the razor backed spur above mentioned. The centre of the ground was occupied by a low raised platform of broken stones, circular in outline, and measuring 13 feet 6 inches in diameter. From a point on the inner stone ring immediately to the left when entering through the gap, two lines of stones diverged to form a

large V connecting the ring and platform. From the opposite or southern side of the platform a solid V of stones extended through the inner ring to the outer ring. There are also traces of two mounds of stones in the intervening space between the platform and inner ring, one about 6 feet in diameter built adjacent to the inner

tion of the lesser peak for a second small circle such as would be required to complete the lay-out of a bora ground of the type described by various investigators as occurring in south-eastern Queensland and New South Wales. This ground is within



Ceremonial Ground of Wakamen Tribe On Iron Mountain

(a) raised platform of small stones, (b) inner stone ring, (c) outer stone ring, (d) larger stone mound, (e) smaller stone mound, (f) large stone v, (g) solid stone v. Scale: one-eighth inch equals one foot.

ring on the north-west side, and the other only $1\frac{1}{2}$ feet in diameter adjacent to the inner ring, just east of of the solid V. The accompanying sketch gives details of the lay-out and measurements as far as they could be ascertained.

No traces of any path along the spur could be identified and circumstances did not permit the examina-

tion of the lesser peak for a second small circle such as would be required to complete the lay-out of a bora ground of the type described by various investigators as occurring in south-eastern Queensland and New South Wales. This ground is within

*Reference: Tindale, N. B., and Birdsall, J. B. (1941) Tasmanoid Tribes in North Queensland.

Taeniophyllum Wilkianum, sp. nov.

By T. E. HUNT, Ipswich

Planta parvissima. Folium solitarium, succosum, lineare, complanatum, falcatum, 5-6 m.m. longum. Racemus circiter 7 m.m. longum. Flores pauci, pallidoflavi, tubulati circiter 3 m.m. longi: perianthi segmenta usque ad antherae altitudinem unita. Labellum integrum, obtusum, supra concavum, 3 m.m. longum: calcar fere orbiculare, 1 m.m. latum. Columna brevissima: anthera alba, prominens.

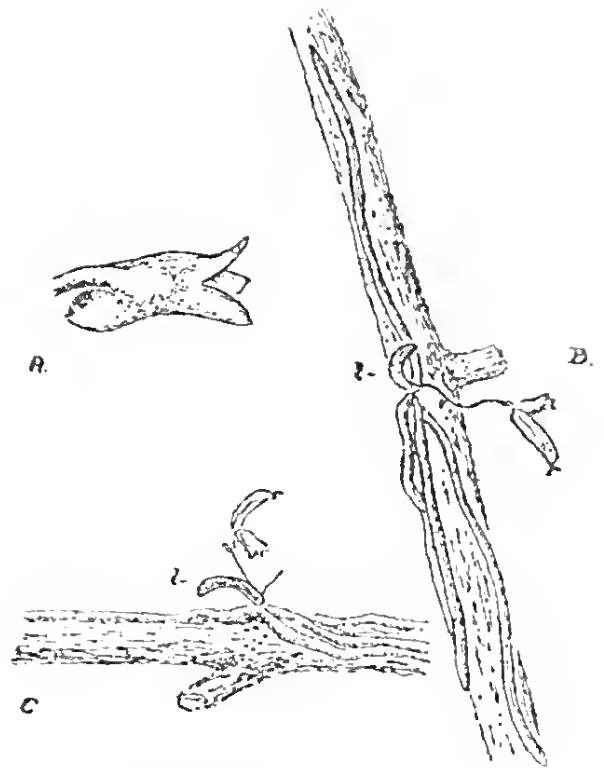
A very small plant. Solitary leaf succulent, broad-linear, flattened, falcate 5-6 m.m. long. Raceme about 7 m.m., with six or more minute flowers which open in succession over several weeks so that capsules, flowers and buds may all be present together. Floral bracts minute, apiculate. Flowers on very short pedicels, yellowish, about 3 m.m. long, tubular; sepals and petals more or less united for part of their length but all free from the level of the anther, free portions acute. Labellum entire, concave above, rather blunt, as long as the other segments; basal spur almost globular, about 1 m.m. in diameter. Column short, anther white, prominent. Capsule terete, curved, about 10 m.m. long, 2.5 m.m. in diameter, furrowed.

Babinda, North Queensland, J. H. Wilkie, 20/7/46.

A parcel of rare species of orchids, received recently from Mr. Wilkie of Babinda, included five plants which, at first glance, appeared to be that oddity of the Order *Taeniophyllum Muelleri*, Lindl. A closer inspection of the plants, however, revealed that one of them possessed a solitary leaf. The same specimen had a flower open at the time, and a critical examination and dissection soon revealed that it belonged to a hitherto undescribed species. It may easily be distinguished from the above species by:—

- (1) Its having a leaf.
- (2) The labellum is entire and not two-lobed.
- (3) The spur is shorter.
- (4) The flower is somewhat larger.

The leaves were absent from the remaining plants but the tops of the minute stems appeared to show scars where leaves had been. The nature of the leaf suggests to me that it



A. Flower enclosed.
B. and C. Plant, natural size.
L. Leaf.

might be a somewhat impermanent feature of the plant; either being cast when the young plant has become established, or developed only periodically. A closer study of *T. Muelleri* might reveal a similar characteristic there.

I have named the new species in honour of its discoverer, Mr. J. H. Wilkie of Babinda, who has done, and is doing so much towards furthering our knowledge of North Queensland orchids.

A New Fern and Some New Fern Records for North Queensland.

(By D. A. SMITH, Brisbane.)

Mecodium contiguum D. A. Smith; sp. nov. affinis *M. raro* (R.Br.) Copel. sed rhizomate robustiore, frondibus magis divisis saepe majoribus, soris comparate angustioribus ellipticis differt.

Felix repens. Rhizoma gracile, longe repens, glabrum, ramosum, ca. 0.5 mm. diam. Frondes sparsae, pendulae, glabrae, usque ad 20 cm. longae; stipites graciles, fusci, 2-4 cm. longi, sursum vel interdum fere ad basin anguste alati. Laminae membranaceae, brunnescentes, irregulariter lineares vel anguste lanceolatae, usque ad 16 cm. longae, 3.5 cm. latae, tripinnatifidae; rhachis alata. Pinnae numerosae, alternae, imbricatae, decurrentes, plus minusve rhomboideo-oblongae, usque ad 2.2 cm. longae, 1 cm. latae, profunde inciso-pinnatifidae, superiores breviores, ceterae subaequilongae vel interdum harum aliquae irregulariter elongatae vel abbreviatae; segmenta primaria contigua, plus minusve profunde incisa vel pauci-lobata; venae manifestae, fuscae. Sori numerosi, in parte superiore laminae praecipue siti, ad apicem segmentarum semi-immersi, elliptici, ramis duobus venularum suffulti; indusium quam segmentum angustius, ca. 1.7 mm. longum, usque ad medium bilobum, margine loborum integrum; receptaculum inclusum.

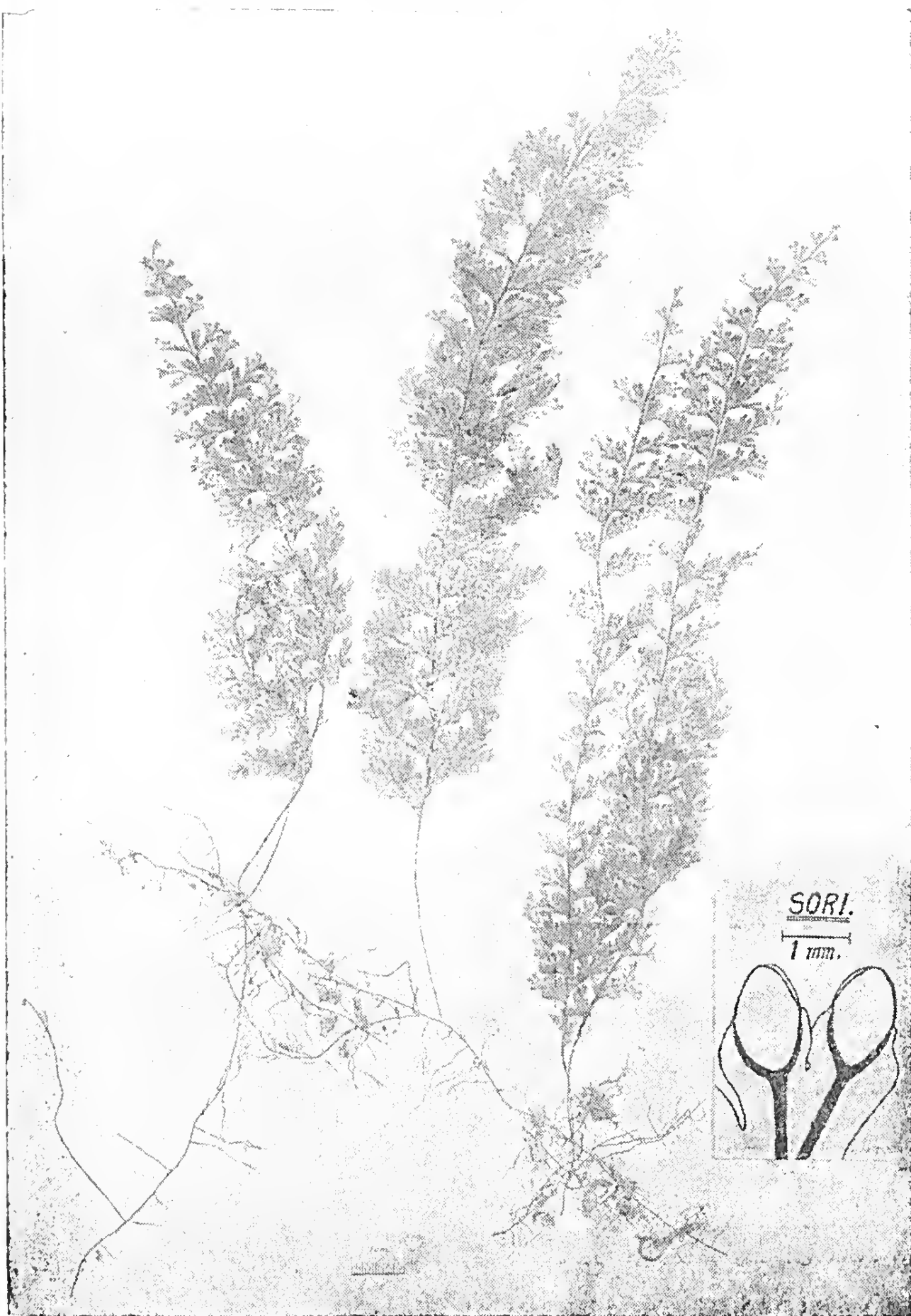
Rhizome slender, wiry, wide-creeping, branched, glabrous, about 0.5 mm. diam. Fronds scattered, stipitate, pendulous, glabrous, up to 20 cm. long; stipes slender, dark, narrowly but distinctly winged in the upper part and sometimes almost to the base, 2-4 cm. long. Lamina membranous, brownish when dried, irregularly linear to narrow-lanceolate, up to 16 cm. long, 3-5 cm. broad in the widest part, tripinnatifid; rachis winged throughout, the wing flat. Pinnae numerous, overlapping, alternate, decurrent, somewhat rhomboid-oblong, up to 2.2 cm. long and 1 cm. broad, all about the same length except the shorter uppermost ones or with some irreg-

ularly elongated or abbreviated, deeply incised-pinnatifid; primary segments contiguous, more or less deeply incised or few-lobed; veins moderately prominent, blackish. Sori numerous, more abundant in the upper part of the frond, half immersed in the apices of the ultimate segments, elliptic, subtended by a fork of the veinlets; indusium narrower than the segments, about 1.7 mm. long, 2-lobed to the middle, the margins of the lobes entire; receptacle included.

Cook District: Mossman River Gorge. L. J. Brass 2048, 5/2/1932. (Growing thickly on wet rocks in the rain forest; fronds pendulous, up to 6 ins. long; a very beautiful species.) (Type — in Queensland Herbarium, Brisbane.)

I hesitated for some time to publish a description of this plant as a new species as it appeared to be somewhat similar to a rather poor specimen in the Queensland Herbarium collected in British New Guinea by the Rev. Copland King, No. 106 (1908), and identified as *Hymenophyllum ooides* F. Muell & Baker by F. M. Bailey. Dr. E. B. Copeland followed Bailey's interpretation of this species in Phil. Journ. Sci. 64 (1937) 108. Later, in Phil. Journ. Sci. 73 (1940) 459, Copeland, following Christensen's interpretation based on a comparison with the type, recognises *Mecodium ooides* (F. Muell. & Baker) Copel. as a completely different species. In correspondence with Dr. Copeland regarding the proposed new species, *Mecodium contiguum*, he stated: "King 106 and 246 are *Mecodium Archboldii* Copel. Phil. Journ. Sci. 73 (1940) 458, Plate I." This is certainly not identical with *Mecodium contiguum*.

The closest Australian ally appears to be *M. rarum* (R.Br.) Copel. From this species, *M. contiguum* differs in having a stouter rhizome, more divided fronds which are also usually larger, and comparatively narrower elliptic sori. The paired branches of the veinlets which subtend the sori are also much less oblique than those of *M. rarum*.



Mecodium contiguum, D. A. Smith, sp. nov.

Culcita villosa C. Chr.

Cook District: Mt. Spurgeon, C. T. White 10702, Sept. 1936. (Fronds 1.5 m. high; base of stipes very hairy with reddish brown hairs).

This specimen was described as *Hypolepis tenuifolia* (Forst.) Bernh. var. *hirsuta* by White and Goy in the Victorian Naturalist Vol. LIV (1938) 149. It was later found to be a *Culcita* and to agree perfectly with an isotype specimen of *Culcita villosa* C. Chr. collected by L. J. Brass (4971), July-Aug., (1933) at Urnu, Vanapa Valley, Papua.

Dryopteris leucolepis (Pr.) Maxon
(*Lastrea leucolepis* Presl.)

Cook District: Barron Falls, alt. 1,071 ft., D. A. Goy 394, 27/7/1938. (Growing in a drain at top of falls). Determined by Dr. E. B. Copeland, University of California, Berkeley, California, U.S.A., May 1943.

This Malaysian and Polynesian species has not previously been recorded from Australia.

Dryopteris unita (Kze.) Copel.

Cook District: Between Cairns and Herberton, C. J. Wild, 1891.

Bailey had placed Wild's specimen under *Aspidium molle*, Sw., (now *Dryopteris nymphalis* (Forst.) Copel.), a different species altogether. Actually the specimen agrees fairly well with others from Malaysian and Polynesian sources.

The species has not previously been recorded from Australia.

Tectaria devesa (Kze.) Copel.

Port Curtis District: Olsen's Caves, about 15 miles north of Rockhampton, S. T. Blake & L. J. Webb 15682, 22/4/-1945 (on ledge in crevice in limestone hill supporting monsoon forest).

Except for being slightly more robust, the above specimen agrees very well with one in the Queensland Herbarium which was collected by M. R. Henderson from Pahang in the Malay Peninsula. As the latter specimen was also found growing on limestone rocks, the species appears to prefer a calciferous substrate.

Although this new record for Australia is from Central Queensland, as the species occurs in Malaysia, it seems very probable that it will ultimately

be found in some of the limestone country in North Queensland.

Sticherus flabellatus (R.Br.) Ching var. *compacta* (White & Goy) D. A. Smith, nov. comb.

(*Gleichenia flabellata* R. Br. var. *compacta* (White & Goy).

In view of the recent revision of the Gleicheniaceae by Ching, this new combination becomes necessary.

Dryopteris decora Domin (*Aspidium pteroides* Sw. var. *terminans* F. M. Bailey).

In his Bibliotheca Botanica Domin describes *D. decora* as a new species and places *Aspidium pteroides* var. *terminans* consists of a single pinna with only a few of the basal lobes bearing very few sori towards their tips. To judge from better specimens since collected it seems apparent that the var. *terminans* is based on an incompletely fertile pinna since normally the sori occur all around the margin of the lobes. In view of this, I am unable to separate the normal specimens of Bailey's variety from *D. decora* Domin.

Diplazium polypodioides Bl.

In the past there appears to have been a good deal of confusion between this species and *Diplazium Dietrichianum* (Luer.) C. Chr. in Queensland. In the Queensland Flora, Bailey bases the record of *D. polypodioides* on two specimens. One of these I have not seen, but the other, collected by Fitzalan, was seen by Mr. R. A. Holttum of the Botanic Gardens, Singapore, whilst visiting Brisbane a few years ago, and he stated that this specimen definitely belonged to quite a different species, possibly *D. Dietrichianum*. To judge from some remarks by Domin it seems very probable that Fitzalan's specimen is this latter species although I have not been able to compare his specimen with the original description.

At that time true *D. polypodioides* was not represented in the Queensland Herbarium. However, since then two specimens forwarded by the N.Q. Naturalists' Club, Cairns (Manski) and Edge Hill (Flecker), have definitely established its occurrence here.

Some Mosquitoes With Unusual Habits

By ELIZABETH N. MARKS, Brisbane.

It is well known that all mosquitoes require water in which to breed and most people have observed the larvae or "wigglers" in tanks, creeks and waterholes. Larvae of some species, however, are less easy to locate.

Those of the genus *Taeniorhynchus* (also known as *Mansonia*) have the breathing siphon with sharply pointed tip and special saw-like appendage, and this is inserted into the root of an aquatic plant, from which the larva is then able to obtain its oxygen without ever coming to the surface of the water to breathe as do the larvae of almost all other mosquitoes. This genus includes *T. xanthogaster*, "the golden mosquito," a striking orange coloured adult sometimes encountered in the vicinity of swamps, particularly during the autumn.

A large number of mosquitoes breed in water-holding cavities in the branches or exposed roots of trees and hollows in stumps or fallen logs. Another group selects the water which collects at the base of the leaf axils of such plants as pandanus, cunjevoi, taro, crinums, bananas, pineapples and certain grasses and sedges. Others again are found in the "pitchers" of pitcher plants.

Among those breeding in plant axils are *Aedes kochi* and its allies, the larvae of which are clothed with tufts

of stiff hairs, which give them a "hedgehog" appearance, and which enable them to crawl for quite long distances over a moist surface, a very useful attribute since a leaf axil is liable to rot or dry out. The adult of *A. kochi*, a pest species in New Guinea, is speckled black and white.

Also found in plant axils, sometimes in barely a thimbleful of water, are larvae of the genus *Harpagomyia*. The adults are small mosquitoes ornamented with brilliant silvery scales and with unique feeding habits, which were first observed in detail by Jacobson in Java.

In most mosquitoes the proboscis is a fairly straight appendage of uniform diameter; in *Harpagomyia* it is specially adapted with a flexible joint and a very swollen tip clothed with long hairs. Food is obtained from ants of the genus *Cremastogaster*. The mosquito places itself in front of an advancing ant, sometimes nipping the ant between the front legs. The ant stops and opens its jaws, and the mosquito thrusts the swollen tip of its proboscis into the ant's mouth and absorbs the food offered, while the ant strokes the tip of the proboscis with its palpi.

The species mentioned above all occur in the vicinity of Cairns.

Excursion to Chillagoe

By JEAN DEVANNY

The recent inauguration by the N.Q.N.C. of monthly field excursions is proving an unqualified success. The highlight of these, so far, was the June trip made by forty-seven Club members and friends to the hinterland township of Chillagoe, about 130 miles west of Cairns.

The chief objective was inspection of the caves at Chillagoe and Mungana, but none were disappointed to find the limestone belt in which these are situated to be in itself worth the visit. A strip of magnificent country! A few miles below Chillagoe, the

bluish-white and mottled limestone crags begin to supplant the granite country, their channelled and peaked formations rivalling in beauty anything of that kind presented by Fitzpatrick in his colour films of Arizona and Mexico.

In contrast were the forested hills, their grass in the "dry" a strawberry-coloured background for their embroidery of dispersed ever-green vegetation.

Chillagoe itself was found to be somewhat of a deserted village, set in the midst of a gigantic, delightfully

verdant "sunken garden." *Cryptostegia grandiflora*, or rubber plant, lovely for all that it is a wretched weed, sprawled in profusion about the homes, embraced the bases of the "wallaby castles" and crags that formed the sides of the vast cup.

All the vegetation was as fresh as the invigorating air. Besides the predominant *Eucalyptus* of many species, other interesting trees and bushes included three kinds of native *Bauhinias*, *Strychnos lucida*, *Terminalia*, *Gyrocarpus Jacquini*, whose seeds as they fall gyrate by means of their peculiar vanes, *Alstonia verticillata*, and bunchy China Apple. The bloodwoods were in creamy flower.

One member of the party gave a demonstration of the collection of mosquito larvae on Chillagoe Creek.

The willing co-operation of the local people ensured every facility for inspection of the Cathedral and Markham caves at Mungana and those at Chillagoe. Each cave had its points of special interest. Some of the visitors became ecstatic about the delicate tracery, tapestries, statuary and pillar formation of the Markham. Others were more impressed by the majesty of the prodigious caverns at Chillagoe. Fossils and molluscs on the floor of the caves were specially investigated. Not least spectacular were the fig trees that dropped their roots through sporadic openings in the roof and trailed them down the sides and tunnels of the caves in lengths several times in excess of the height of the

trees themselves. In at least one instance the root found its way vertically down the centre of one of the large chambers.

Yes, there in that hinterland, not inhospitable to man, are caves lacking only the addition of man-provided facilities of approach to put them "upsides," as objects of tourist attraction, with the world-famed Waitomo in New Zealand and Jenolan in New South Wales. A few years protection and nature herself would remedy the inconsiderable damage wrought by vandals to stalagmites and stalactites. A whitewash brush could easily dispose of the disfigurement of scrawled names.

There seemed no end to the appeal of that country respecting objects of natural history and artistic interest. At Mungana, examples of early aboriginal art in the form of rock paintings were revealed, in a state of perfect preservation. This latter condition, one is pleased to state, a tribute to the innate sense of cultural values of the local population. Indeed, our guides expressed unequivocal disappointment in that their representations to the "powers that be" on behalf of official assistance to preserve their natural treasures had met with absolutely no response.

Some specimens of fossilised coral deposits and some dendrites—fern-like patterns formed by crystals of manganese dioxide between layers of rock—were secured for the North Queensland Museum collection.

EDIBLE PLANTS OF NORTH QUEENSLAND. (Continued)

By H. FLECKER.

ARAUCARIACEAE :

231. *Araucaria Bidwillii* Hook., Bunya Pine.
Seeds eaten raw.

CYCADACEAE :

232. *Cycas media* R. Br., Kammana.
Nuts roasted and left on ashes all day; shells broken next day on stones, the inside made into flour and left in dilly bag for 24 hours before being eaten (Roth).
233. *Macrozamia Hopei* W. Hill, Arumba.
Nuts prepared similarly to above.
234. *Bowenia spectabilis* Hook., Jul-bin.
Roots and cones baked, crushed, washed and roasted.

(To be continued)

Published by N.Q. Naturalists' Club.

1. Check List of N.Q. Orchids. Price 1/-.
2. Marketable Fish of Cairns Area. Price 1/-.

NATIONAL MUSEUM
28 JAN 1947

The North Queensland Naturalist

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Vol. XIV

CAIRNS, 1st DECEMBER, 1946

No. 81

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at School of Arts, Shields Street, Cairns.
usually on second Tuesday in alternate months, at 8 p.m.

Next Monthly Meeting, Tuesday, 10th December, 1946

NOTICE TO MEMBERS

Members of the N.Q.N.C. are requested to report to the Hon. Secretary special incidents of interest which they may observe in the world of natural history in North Queensland, botanical, zoological or geological, and which appear to be worthy of recording, always bearing in mind that the chief thing in such reporting is absolute accuracy of observation. Items unsuitable for the Journal may be welcomed for inclusion in the weekly Nature Topics column of "The Cairns Post."

MEETINGS AND EXCURSIONS

31st October: Pine Creek. Attendance 25.

10th September: Annual General Meeting. Officers elected: President S. E. Stephens; Vice-Presidents: T. F. Webb and Captain H. S. Sullivan; Secretary: J. Wyer; Assistant Secretary: Mrs. J. Devanny; Treasurer: R. J. Gorton; Auditor: F. R. Morris;

Additional Members of Committee: G. Stephens, Alf. Read; Publications Committee: Dr. H. Flecker, S. E. Stephens, Mrs. J. Devanny.

22nd September: Excursion to Mossman Gorge, attendance 25. See page 16.

8th October: Monthly Meeting. Lecture by Dr. P. O. Flecker—Bees and Bee Keeping.

27th October: Excursion to Fitzroy Island, Attendance 33.

12th November: Social Meeting at Mrs. S. Favell. Exhibition of Shells by Mrs. McKauge.

24th November: Excursion to Fishery Falls.

20th December: Christmas Gathering—Residence of Mrs. Giraud.

22nd December: Excursion to Behana Falls.

New Members elected 10th Sept.: S. Dean, Cairns; R. Dougherty Box 846, Cairns; Miss Duncan, Cairns; Mr. H. Whibley, Cairns; Dr. P. O. Flecker, Mareeba; Mr. and Mrs. H. O. Barkus, Edge Hill.

8th October: Mr. and Mrs. Seaton, Draper St., Cairns; W. W. Abell, Durong; P. N. Reddan, Cairns.

A NEW ORCHID FROM MT. BARTLE FRERE

T. E. HUNT Ipswich.

LIPARIS BRACTEATA, sp. nov.

Rhizoma breviter repens. Pseudobulbi pyriformes, complanati, rugosi, 4-5 c.m. alti, 2-2.5 c.m. lati, cum bracteis magnis et perpetuis 4. Folia 2, anguste spathulata, canaliculata,

usque ad 30 c.m. longa, 1-1.5 c.m. lata. Racemus circa 15 c.m. longus, ovatus; bractee caulinae 3-4. Flores circa 9, viridoflavi. Pedicelli 1 c.m. longi. Sepala 1 c.m. longa, linearia, acuta, marginibus recurvis; petala

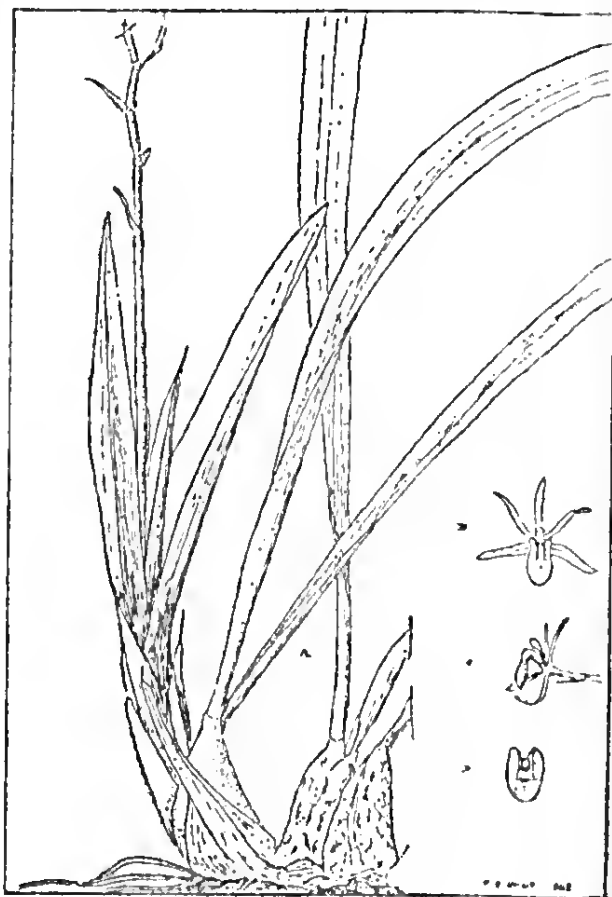
anguste linearia, marginibus recurvis; labellum circa 1 c.m. longum, 3 m.m. latum, reflexum, cum glandibus basilibus 2. obscuris. Columna subincurvata; anthera obscura.

Rhizome shortly creeping. producing scape-like stems which mature into pyriform, laterally compressed, irregularly wrinkled, pseudo-bulbs, 4-5 c.m. high and 2-2.5 c.m. wide. Young scapes with two leaves and below these four persistent sheathing bracts and above, on the raceme, several small distant ones and at the base what may be either a third leaf or a large leaf-like bract. Leaves on the mature bulb, two very narrowly spatulate, about 30 c.m. long and 1-1.5 c.m. wide at the widest part. sharply keeled, channelled, lamina not flattening out, a prominent nerve on each side of the mid-rib, dark green. Rhachis of raceme erect, oval in section. Raceme 15 c.m. or more long with about 9 very pale greenish-yellow flowers. Pedicels, with ovary, about 1 c.m. long. Buds slightly falcate. green. Sepals about 1 c.m., linear, acute, with revolute margins and a fairly prominent medial nerve; petals somewhat shorter than the sepals, narrow-linear, margins revolute; labellum attached to the base of the column and shortly clasping it, almost as long as the sepals and 3 m.m. wide across the lamina, erect for nearly half its length then recurved through almost 180 degrees, sides erect in the basal portion and flattening out after the bend, margins entire, medial nerve thick but not prominent, two inconspicuous green rounded, conjoined calli at the base of the lamina and coming forward from them, two orange-coloured markings. Column erect, bent forward slightly from the middle, slender, broader at the base and with very narrow wings at the top; anther small, stigma immediately below the white rostellum, small, ovate.

Mt. Bartle Frere, J. H. Wilkie, September, 1946.

This species appears to be midway between *L. Nugentae*, Bailey, and *L. Fleckeri* Nicholls, as it has many features in common with both. The pseudo-bulbs are smaller than those between *L. Nugentae* Bailey, and *L.*

and narrower, the flowers are smaller. the segments are not reflexed and the labellum lacks the large orange-coloured ridges. While being somewhat wrinkled, especially in the older ones. the pseudo-bulbs have not the deep regular pattern shown by *L. Fleckeri*, also the flowers are larger than those of that species and have the revolute margins of *L. Nugentae*. The rounded calli at the base of the label-



A.—Plant reduced.

B.-C.—Flower enlarged.

D—Labellum from behind showing the two very small calli.

lum are very small; the orange-coloured plates of *L. Nugentae* and others are represented by colour only.

An interesting feature of the new species is the persistence of the lower bracts which remain for several years. I am uncertain as to whether the leaf at the base of the young raceme is a foliaceous bract or a true leaf. If it be a true leaf then either it or one of the lower leaves is not persistent. As the only ways of making sure involved the loss of the young scape from the type plant I let the matter rest.

Anemone and Gecko

By JOHN SINCLAIR, Melbourne

During a night expedition, late in October, 1945, on the Reef surrounding Green Island, I collected, inter alia, a specimen of the hermit crab, *Dardanus deformis*.

This crab was established in what appeared to be a *Tonna* shell about 3 inches in length on which the crab had 3 anemones arranged across the upper surface.

Returning from the Reef at about 2 a.m. I placed the night's collection in a tank about 2 feet square and 8 inches deep. The collection was not large, being but a few small mollusca and two species of urchins.

As I left the tank the hermit crab was the only thing in any way active in his vague wanderings around the tank floor. The tank was lying on the ground among small trees.

Next visiting the tank at about 8 a.m. all specimens were much as I had left them, except that a small *Gecko* lizard was firmly held by one

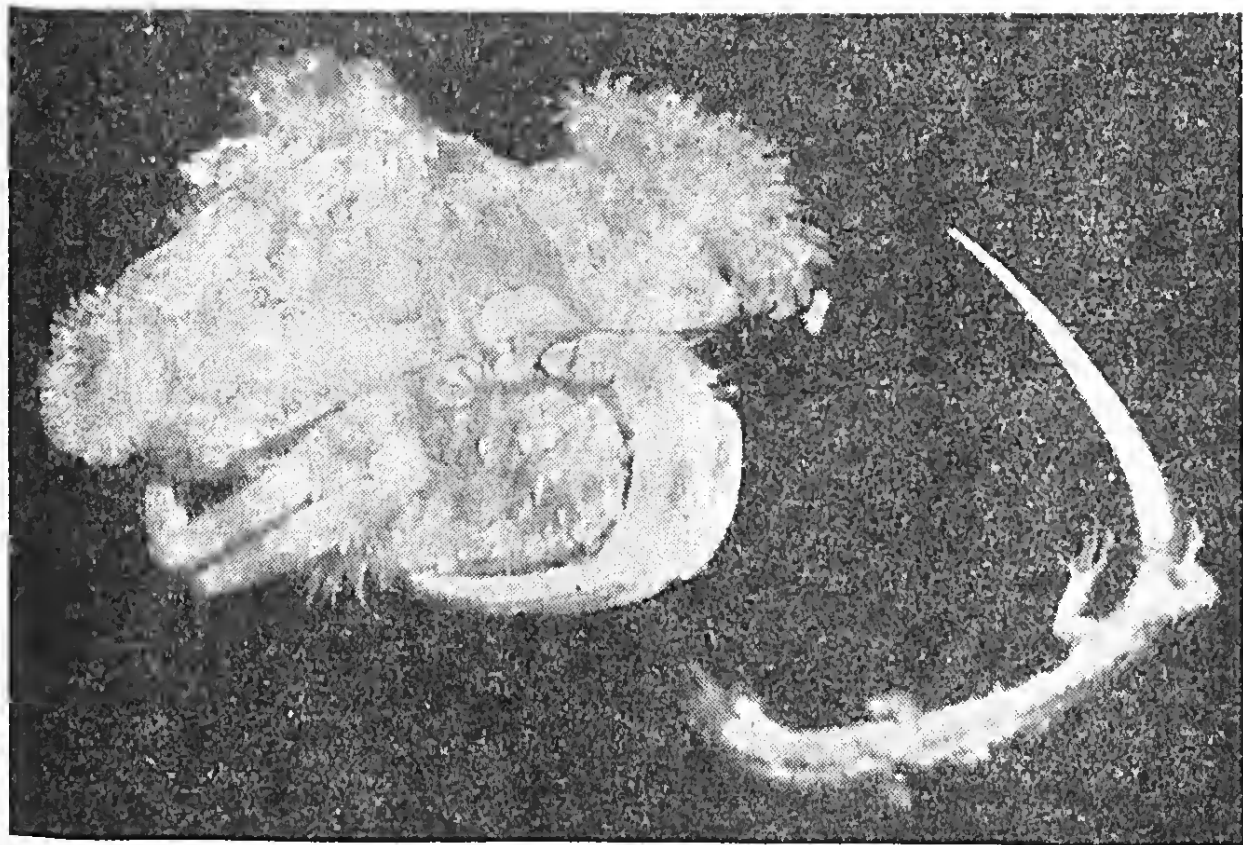
of the anemones, being enveloped to a point just past the fore legs. The anemone was markedly distended with the effort.

So firm was his grip that the lizard was not dislodged by the movements of the crab, nor even when I lifted the whole specimen into another tank more suitable for photographing.

As I was focusing to take the accompanying photograph the anemone disgorged the lizard.

The lizard showed no signs of injury beyond what appeared to be slight corrosive effects by the anemone's digestive juices on that surface which had been enveloped.

There was no evidence as to the state of the lizard when it got into the tank, or whether it was capable of any resistance when seized by the anemone, or whether the lizard was alive or dead at the moment of encounter.



HYPOLYCAENA DANIS TURNERI A DAINTY ORCHID LOVER

By R. L. HUNTER

Growing orchids and getting them to flower near virgin rain forests is not always successful, for, although the orchids are in or near their natural habitat the grower will have to contend with their natural enemies. Here in the Barron Gorge one of these enemies is a very beautiful and rare butterfly.

Dendrobium undulatum grows plentifully in the Gorge and we have this species and also *D. Phalaenopsis* growing in our orchid house. Very often we found the buds and flowers of these orchids were eaten and on close inspection discovered the eggs of a butterfly laid on the bud tips. We collected and incubated the eggs, which hatched into small green slug like caterpillars. These we fed on orchid flowers and tender young leaves. In a short time the larvae pupated and later the butterfly emerged and turned out to be *Hypolycaena danis turneri*.

The butterfly is blue and belongs to the family *Lycaenidae*. The following

description taken from "What Butterfly is That?" will help orchid growers to identify this beautiful orchid pest.

"Male: upper side: forewing white with broad black margins; hindwing white, base narrowly and outer margin broadly black; a white marginal line near tails; a brilliant metallic blue band near outer margin. Under side similar to upper but paler, central areas cream, metallic band not so brilliant.

Female: similar to male but outer margin much more rounded. A very distinctive species. The colour of the metallic band of the hindwing varies with the angle of view; from some angles it disappears."

We have this butterfly in our collection and would be pleased to show it to any orchid grower who may be interested.

(It is hoped to publish a plate of this butterfly in our next issue.—Ed.)

SOME QUEENSLAND BOWEL PARASITES

By P. O. FLECKER, Mareeba.

Australia is noted for the low incidence of intestinal parasites as compared with that of the Old World countries; however this is not so true when applied to Queensland, and more particularly North Queensland, where bowel infestations are quite common. There is probably no animal in possession of an alimentary canal which does not harbour in that canal some protozoan or metazoan parasite. Microscopic examination of the material from the elocaca of any frog will show an infinite variety of organisms relying entirely on the host for nutriment and protection.

It is difficult to say which parasites are indigenous to Australia and which have been imported. Some have obviously been imported with domestic

animals; others may have come from shipwrecked rats or Captain Cook's pigs; while yet others may have arrived while undergoing their intermediate development in insect hosts. However, most are well established, as any visit to an abattoirs or examination of a marsupial's bowel will determine.

The lowest animal phylum, the Protozoa, is well represented amongst intestinal parasites. Species of *Amoeba*, *Balantidium*, *Giardia*, and *Trichomonas* are to be found amongst both wild and domestic animals. Most forms are merely scavengers, feeding on food residues which have been already digested for them, though some are capable of attacking the lining of the gut and producing ulceration. All

spread from host to host by the same means, by cyst formation. Under certain conditions, the organism transforms to this dormant stage, when a tough membrane is formed round its cell, thus protecting it from dehydration. The cysts are passed from the bowel, and are capable of living for days or even weeks. Should they be swallowed in food or water by another host, they then shed the cyst wall and resume their existence in vegetative form.

Perhaps more interesting are the Helminthie parasites, both because of their adaptations to suit their mode of life, and because of their complex methods of passing from host to host. The round-worms, flat-worms, and tape-worms are all well represented in Queensland.

Amongst the round-worms is *Ascaris lumbricoides*, which infests all farm-yard mammals and can generally be found in the small intestine of the larger grass-eating marsupials. Though worms found in different animals are indistinguishable morphologically, it has been found that larvae from one animal host will not infect a different one; thus worms from pig intestines will live in other pigs but not in horses or cattle. Eggs from this worm are numerous; it has been estimated that the oviducts of a single female contain 27 million eggs. These are passed in the faeces, and soon hatch into minute larvae. When swallowed by the correct host, they burrow through the lining of the small intestine to reach the blood-stream, where they are carried, through the liver and heart, to the lungs. On reaching the lungs, they grow and moult; after a stay of a few days they migrate from there along the air passages, up the wind-pipe till the gullet is reached, then down this organ to the stomach and small intestine. In a further six weeks they become adult, having reached a length of about ten inches.

Another nematode with a similar life cycle is the hook-worm, which is well known because one species is parasitic in humans. However, other species of this worm occur in Queensland, particularly *Ancylostoma caninis*, a parasite of dogs. The dingo is often host to

this worm, which inhabits the small intestine, attaching itself by curved teeth to the membrane and feeding on blood. Eggs hatch into larvae which are capable of penetrating unbroken skin and so reaching the bloodstream, and finally the lungs. Their migration from there onwards is similar to that of *Ascaris*.

Trichinella spiralis is a parasite of the rat, and so has the cosmopolitan distribution of its host. The worm relies on the cannibalistic propensities of the rat for its propagation; other animals may, however, become infested, notably carrion-eating birds, the pig, and, occasionally, man. The adult worm lives in the small intestine, producing living larvae which are deposited directly into the blood-stream. These are carried to the muscles, where they become encapsulated. When the flesh containing these larvae is eaten by another rat or susceptible animal, the larvae are able to reach the intestine and develop into mature worms.

Tape-worms of many species may be found in the intestines of flesh-eating animals. The flesh of many grass-eating animals may be found to contain the larval forms, showing the wide incidence of these worms. For most species two different hosts are necessary to complete the life cycle; however forms occur where the development can be completed in one animal, while others require three different hosts. The adult worm varies in length from species to species; some reach fifteen feet long, others are almost microscopic. Essentially, the worm consists of a head, armed with hooks and suckers to anchor it in place, and a number of segments arranged below. Immature segments are close to the head; those at the far end are "ripe" and contain mature eggs. While the "ripe" segments are continually dropping off, new ones are growing from the head end. Eggs, when passed, remain in the grass or water till swallowed by the appropriate host, a different animal from that which harbours the adult worm. In this intermediate host, the eggs pass through the gut wall and are distributed to the various organs, where the

larval forms develop. These small, cyst-like larvae, or cysticercae, remain dormant until the flesh containing them is eaten by an animal which can act as host to the adult worm, in which case they will continue development and attain maturity in the bowel.

The foregoing are merely a few examples of parasitic organisms. Many more such could be described, and doubtless there are more again that

have never been described. It can be seen from these few mentioned that a study directed towards such animal forms would not be time ill-spent, as each has an extraordinarily interesting life history. Perhaps this short account may stimulate interest, and so bring about an investigation of the inhabitants of the alimentary canals of our native fauna.

SEAHARES ON THE GREAT BARRIER REEF

By JEAN DEVANNY

The mollusc *Aplysia*, generally known as the seahare, belonging to the sub-order Tectibranchiata, carries its shell within the body. It is so named because of its peculiar appearance, with its head drooping forward, as it somewhat resembles a hare feeding. When creeping over the seaweed with its mantle flaps, or wings, folded over its back, the seahare looks like a huge slug. It has two soft protuberances shaped like horns, in front, and two at the back of its head. These it is able to retract almost entirely into the head.

The species of seahare I have become familiar with on Green Island and Low Island reefs, off the coast of North Queensland, differ widely, in some cases, from the species I knew in southern waters. The type that periodically visits Sydney Harbour has a body of somewhat jelly-like consistency and is found in two distinct colourings. Some are black on the upper surface and purplish or greeny-blue beneath. Others are grey-white all over. The only time I handled these southern specimens was in September, 1941, I found that invariably a milky-white fluid was exuded. On removing several of both colours from the water, I was astonished to find that two or three of the white ones deposited their insides in my hand.

The only other time I have had this happen in connection with a seahare was on Green Island reef in September, 1944. There, a very small lemon-coloured seahare deposited its internal apparatus in my hand. (Note the same time of year). This specimen is the

only lemon-coloured seahare I have seen.

I have never seen, on the above reefs, black or white seahares. Those on the reefs, of the jelly-like species and otherwise, or either mottled green or dark-grey with brown markings, overlaid with filmy white lace. The ones that sport a tail generally painted black. In southern waters, the black animals swam about freely, without unfolding their free mantle flaps. The white ones flapped their "wings" continually when swimming. On the reefs I have never seen a seahare swimming. Nor have I ever seen them cuddling up together in heaps when depositing their egg-strings, like fine narrow braid, upon rocks, as is their practice, in my experience, down south.

The first seahare I encountered on Green Island reef astounded me by displaying a concave, saucer-shaped posterior wider than the body, which was cartilaginous. It was easily depressed by finger pressure and had free mantle flaps. Later, on the same day, I found on two animals, relatively small, with the saucer-shaped posterior but with the mantles folded so closely to the body that I could not open them. They were apparent only by means of a line down the back. And the body was so hard that I could not indent it by thumb pressure. The foot in these cases was not defined; it appeared as a brown stripe along the under-surface. When these animals were found, one had the foremost portion of its head, much elongated, thrust into an aperture, like the syphon of a clam, only green, in the centre of the

saucer-posterior of the other animal. As I handled them, the first withdrew from that position, expanded its head to normal and extended its "horns." After a great deal of handling, the expulsion of a purple fluid was induced from one of them, and both exuded an albuminous substance.

Within a few feet of these two, a large specimen, about nine inches long, of the ordinary-shaped seahare, with a tail, fed upon the algae. Over years, the above species of seahares became familiar to me on Green Island reef and I found them all the year round, by day and by night. But never have I seen them occur in any number, as in Sydney Harbour.

On Low Island reef, about forty miles further north, during several visits between May and October, in 1945, I found many specimens of the ordinary jelly-like greenish or dark-grey types, three only of the cartilaginous, medium-hard, saucer-posterior species, but none at all of the very hard saucer-posterior species described above. But one individual only of another species I found that outdid all the others in quaintness and interest.

So neat was this animal's camouflage among the weeds and detritus that had I not bent low to examine a shellfish I would have missed it. It was eight inches long as it lay. From the exceptionally small head, its body gradually amplified to culminate in a posterior as large and round as a fair-sized tea plate and slightly concave. A frilled syphon occupied the centre of the plate and a like aperture was on the back, close to the posterior. Its underside was khaki-green. Its head and body were covered with fleshy, leaf-like projections and frills. These and its posterior and the whole upper surface were webbed and splotched with white upon a base colour of blackish-green. Its front pair of "horns" were tiny, ear-like projections, the back pair were scarcely distinguishable from the ragged, fungus-like growths. No mantle flaps were discernible. When I picked the creature up its body lengthened out to eleven inches. There

was no exudation beyond a slight frothing of milky fluid at the apertures. After being in my hands for a few minutes its very hard, leathery body softened somewhat and became slimy.

Generally, those seahares with free mantle flaps exude a purple substance when disturbed, that turns the surrounding water to the colour of diluted "Condy's Fluid." I attempted to make a serviceable dye of this effusion, but the colour I got was an unsuccessful, etiolated puce. Out on the reef I "milked" a seahare into a clam shell and carried about half a pint of the fluid ashore. Within a few minutes it



X-Ray photographs showing outline of shell.

began to congeal. I began my experiments by mixing a little of it with water and boiling this. However, diluted or undiluted, I got the same ugly off-wine colour. And in the boiling it gave off a terrific stench. After a few hours, the substance, even when well-diluted, set to a stiff jelly.

My experience with seahares does not bear out a suggestion I read in a museum journal to the effect that the animal changes colour like a chameleon. I do not think that this corresponds to changes in the colour of its environment. I once took a seahare, one of the cartilaginous species, from its environment on the reef and confined it to a locale of a totally different character for twenty-four hours, and no change whatever took place in its colouration.

(It is hoped shortly to give determinations of above molluscs.)

MOSSMAN GORGE

By S. E. STEPHENS

The Club Field Day to this delightful area was held on 22nd September and was attended by 26 members and friends. To permit of reasonable time in the gorge the party travelled to Mossman on the afternoon of Saturday 21st. and partook of the hospitality of the good people of Mossman overnight. The Cook Highway and beaches were seen to best advantage in the afternoon light, the shadows helping to mask the fire scorched hillsides. Large yellow flowers of *Cochlospermum Gillivraei* made bright spots of colour along the cliff sections of the road.

The "Good Shepherd" on Mount Demi stands sentinel over the Mossman Gorge which is within two miles of Mossman town and is reached by a pleasant tree lined road through cane-fields. After the limit of cultivation is passed the road plunges directly into the virgin jungle. A flame kurrajong, *Sterculia acerifolia*, in full bloom welcomed us at the jungle fringe—a particularly early flowering specimen of the tree.

The vegetation of the gorge proved to be a typical sample of the growth encouraged by mist laden humid atmosphere. Rocks, tree trunks, even the small twig growth of the bushes, were thickly encrusted with mosses of various species. Orchids were in abundance, but mainly of the smaller and less spectacular species. Amongst those noted were *Dendrobium fusi-forme*, *D. speciosum*, *D. tetragonum*, *D. Prenticei*, *D. agrostophyllum*, *Bulbophyllum Baileyi*, *B. Toressae*, *B. aurantiacum*, *Cadetia hispida*, *Eria Filtzalani*, *E. australiensis*.

Ferns were not plentiful owing

chiefly to the excessively dry season that has killed most of the smaller growth. There is evidence, however, that in a normal season the area would be a happy hunting ground for the fern lover. *Adiantums* were still to be found in odd nooks along the river. The recently described *Mecodium contiguum* (vide N.Q. Naturalist XIV No. 80) which was collected in 1932 by L. J. Brass on wet rocks in the rain forest there was not observed on this occasion, probably having been defoliated by the dry conditions.

Bird life was not plentiful and little was observed, but the period of the day spent in the Gorge was not favourable for successful ornithological work. Ulysses butterflies were observed along the river in fair numbers. A dragon lizard, *Gonioccephalus boydi*, was taken for the museum.

The Mossman River, which flows through the Gorge, is harnessed to operate a hydro-electrical plant, the power house being situated in the Gorge. The stream also supplies by gravitational feed the water requirements of the town of Mossman. At the time of our visit the flow of water in the river had receded to such an extent that restrictions on the use of both electricity and water were anticipated. Such restrictions as were envisaged had never before been necessary so we must consider that we have seen the Gorge in its worst possible condition. Even so it is an enchanting spot.

The thanks of the Club are due to Mr. Harold Lane of the Regional Electricity Board at Mossman, who acted as guide to the party.

NATIONAL MUSEUM OF VICTORIA

PUBLICATIONS OF N.Q. NATURALISTS' CLUB.

1. CHECK LIST OF N.Q. ORCHIDS, Mar., 1945, Price 1/-.
2. MARKETABLE FISH OF CAIRNS AREA, Sept., 1945, Price 1/-.
3. CHECK LIST OF N.Q. FERNS, Nov., 1946. Price 1/-.

North Queensland Naturalist

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No. 82.

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at School of Arts, Shields Street, Cairns.
usually on second Tuesday in each month, at 8 p.m.

Next Monthly Meeting, Tuesday, 11th March, 1947.

MEETINGS AND EXCURSIONS.

- 20th December, 1946: Christmas gathering. See p. 22.
22nd December: Excursion to 'Tringilburra Creek, attendance 28.
14th January, 1947: Monthly meeting. "Trip to Gulf Country." Lecture by Mr. Gilbert Bates.
19th January: Excursion to Buchan Point. Attendance 30.
10th February: Monthly meeting.
23rd February: Excursion to Cairns Intake, Freshwater Creek.
23rd March: Excursion to Pretty Beach.
24th April: Excursion to Barron Gorge and Barron Waters.
25th May: Macalister Range.
22nd June: Campbell's Creek

NEW MEMBERS ELECTED

- 12th November, 1946: Mesdames M. Forbes, A. Read, F. Legge, J. W. Wyer, S. Favell, and Mr. J. Cantrill, all of Cairns.
10th December: Mr. K. Kennedy, Townsville; Mr. J. W. Wilkie, Babinda; Mr. John Reed, Melbourne; Mr. Austin Rogers, Trinity Beach; Dr. C. Knott, Mrs. McKauge, Mr. D. Eekhardt, Mr. J. H. Johns, Miss M. Bryan, Mr. H. Pittard, all of Cairns.
14th January, 1947: Mrs. J. Goff, Edge Hill; Mr. A. Maxwell, s.s. Cape Leeuwin; Miss M. Anderson, Cairns.
10th February: Dr. T. W. Gregg, Mrs. T. W. Gregg; Mr. Wright, Mrs. Wright. Mrs. J. Cantrill, all of Cairns.

TWO NEW BULBOPHYLLUMS FROM BARTLE FRERE

(Family Orchidaceae.)

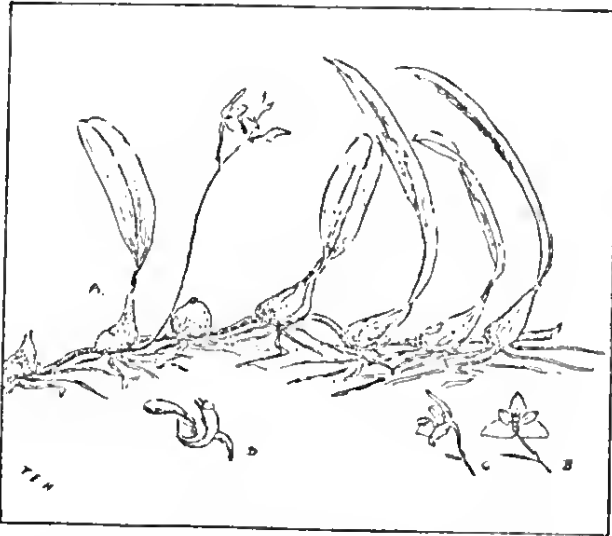
T. E. HUNT, Ipswich.

BULBOPHYLLUM WILKIANUM,
sp. nov. Rhizoma breviter repens. Pseudo-bulbi circa 1 e.m. alti, coniformes, cum collis longis, rugosi. Folium solitarium, 3.5-5 e.m. longum, 8-9 m.m. latum, angustum oblongum. Racemus circa 4 e.m. longus cum 1-4 floribus, viridis, filiformis, bractae minimae. Flores albi, circa 1 e.m. lati. Sepalum dorsale ovatum-ellipticum obtusum; sepala lateralia lata ad bases, obtusa; petala, 2-2.5 m.m. canaliculata, obtusa; labellum 2-2.5 m.m. densum, reflexum, canaliculatum ad basem, pallido-flavum cum punctis coccineis, tomentosum. Columna brevissima, gracilis, viridis cum

punctis coccineis ad basem, alae cum cuspidibus binis; anthera obscura, aeta.

Rhizomes creeping, pseudo-bulbs about 1 e.m. high, conical, about 1 e.m. broad at the base and tapering to a rather long neck, deeply wrinkled. Leaf solitary, 3.5-5 e.m. long, 8-9 m.m. wide, oblong-linear, keeled, nerves somewhat prominent. Raceme few flowered, about 4 e.m. long, green, filiform, bracts minute. Flowers white, 9-10 m.m. broad, widely expanding, medial nerve fairly prominent in all segments. Dorsal sepal 5 m.m. long, ovate-elliptical, obtuse; lateral sepals broad at the base form-

ing, with the column-foot, a shallow cup; petals about half the length of the sepals, channelled, obtuse; labellum equal to the petals, thick in texture, erect for less than half its length then bent forward, channelled



Bulbophyllum Wilkianum, sp. nov.
A, B, and C, quarter natural size.
D column and labellum natural size.

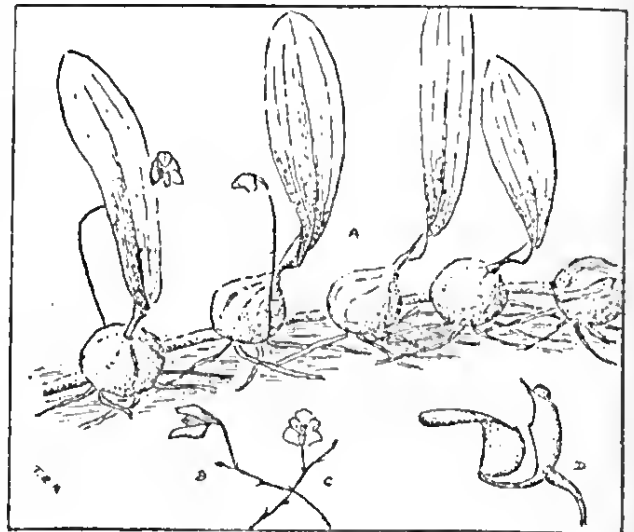
in the basal portion, forward part narrower, about 1 m.m. wide, very pale yellow with crimson markings on the sides towards the base and on each side below, minutely pubescent. Column very short, slender, green with crimson dots on the foot, wings each with two minute apiculate points, the upper ones reaching to the height of the anther; anther small, acute; stigma very small, immediately below the anther.

Mt. Bartle Frere, J. H. Wilkie, September, 1946.

BULBOPHYLLUM WANJURUM, sp. nov., Rhizoma breviter repens Pseudo-bulbi globosi, 1.3-1.4 c.m. alti, rugosi aliquantum. Folium solitarium, 4-6 c.m. longum. 1-1.3 c.m. latum, lineare, obtusum, ad basem angustum, marginibus revolutis. Racemus circa 4 c.m. longus, filiformis. Flores 1-3, albi. Sepalum dorsale circa 5 m.m. longum, ellipticum, obtusum; sepala lateralia circa 6 m.m. longa, falcata, acuta; calcar brevum, latum, obtusum; petala circa 4 m.m. longa, elliptica, obtusa; labellum circa 4 m.m. longum, pallido-flavum, reflexum, trilobatum, ad basem erectum, canaliculatum,

latum, lobi laterales tenues, lobus intermedius longus, angustus, obtusus. Columna brevissima, gracilis, alba; alae altiores quam anthera et cuspidibus demissis; anthera parva.

Rhizomt shortly ereeping, pseudo-bulbs ovoid or almost globular 1.3-1.4 c.m. in diameter, very lightly furrowed. Leaf solitary, 4-6 c.m. long, 1-1.3 c.m. wide, broad-linear, obtuse, keeled, contracted at the base, margins revolute. Raceme few flowered, about 4 c.m. long, filiform, bracts minute, apiculate. Flowers white, not opening widely. Dorsal sepal about 5 m.m. long, elliptical, obtuse, cucullate, with three fairly prominent green nerves; lateral sepals about 6 m.m. long, tapering from a broad base, falcate, acute, with three green nerves, forming with the column-foot a short, broad, blunt spur; petals about 4 m.m. long, elliptical, obtuse, with one green nerve; and a labellum about as long as the petals, very pale yellow, attached to the end of the column foot by a very short claw, erect, broad and channelled at the base, curved forward through



B. Wanjurum, sp. nov.
A, B, and C—Plant and flowers quarter natural size
D column and labellum enlarged.

90 degrees, three-lobed, the lateral lobes thin in texture, very narrow, ending in blunt points, mid-lobe very minutely pubescent towards the base, long, narrow, blunt; column short, slender, white; wings terminating with an acuminate point on each side of the anther and exceeding it, and with

a minute point on each side about half way up the column; anther small, greenish; stigma oval; column foot curved, green, tapering towards its junction with the labellum.

Mt. Bartle-Frere, J. H. Wilkie, September, 1946.

The flower from which the description of *B. Wanjurum* was made had a group of minute red dots outside near the apex of each petal. They were present also on a subsequent

flower, but disappeared as the flower aged. I have omitted mention of them from the description as they might not be a constant feature of the species. They are shown in the figure.

The two species were found growing together on Mt. Bartle Frere by Mr. J. H. Wilkie of Babinda in whose honour I have named one of them. The other takes its name from the Wanjuru aboriginal tribe in whose hunting ground Mt. Bartle Frere lay.

A NATIVE SUGAR BAG

By S. E. STEPHENS President N.Q. Nat. Club.

The accompanying illustration represents a fine specimen of aboriginal handiwork and indicates the patience and infinite labour that a native of olden times would expend in the



gathering of some choice item of food. The tree was a good specimen of Ironwood, *Erythrophloeum Laboucheii*, standing on the bank of Emu Creek immediately below Emu Falls and

alongside the old Irvinebank-Gurumba pack track. The locality would be a favourite one with aboriginals as the large pool at the foot of the falls abounds with fish, and other game such as marsupials and birds are plentiful—a condition which will scarcely have varied since aboriginal days as the country is still in virgin state. It is within the territory of the Barberem tribe as defined by N. H. Tindale. (1)

The tree had a trunk approximately twelve feet high and was twenty inches in diameter at three feet from the ground. A small pipe varying from two inches to five inches in diameter extended from the main fork almost to the base. At the fork a small knot hole gave access to the pipe and formed the entrance to a bees' hive. The entrance hole had been slightly enlarged by chopping by aboriginals in an endeavour to reach the honey. Apparently, after starting excavation at the entrance the discovery was made that the honey was located much lower in the trunk. The excavation shown in the illustration was made at approximately six feet from the ground (to the centre of the cut). The cut is 21 inches in greatest length, 7 inches in greatest width, and 7 inches deep at the centre. The opening to the pipe where the bees' hive would be located was $8\frac{1}{2}$ inches long by 2 inches wide. The cut has evidently been made with stone implements. The timber is so close grained and hard that it has retained well the marks of the cuts.

The size of the opening is such that a man's hand can be only just inserted into the nest cavity. Thus it would be very difficult to gather a handful of comb and withdraw it through the opening. Possibly this duty would have been performed by a picaninny held up to the excavation. On the other hand a stiek may have been used in the manner explained by Roth (2).

The fact that this timber is so hard and durable and that it was a standing tree probably accounts for the survival of this specimen over so many years. Tradition states that this sugar bag tree was known as a landmark

over many decades. The appearance of the tree certainly bears out its reputed age.

The specimen has been collected and placed in the ethnological section of the North Queensland Museum collection, being exhibit No. 153 of that section.

References

(1) Tindale, N. H., "Distribution of Australian Aboriginal Tribes," Trans. Roy. Soc. S. Aust. LXIV (1) 1940.

(2) Roth, Walter E., "Ethnological Studies among the N.W. Central Queensland Aborigines."

Family Orchidaceae

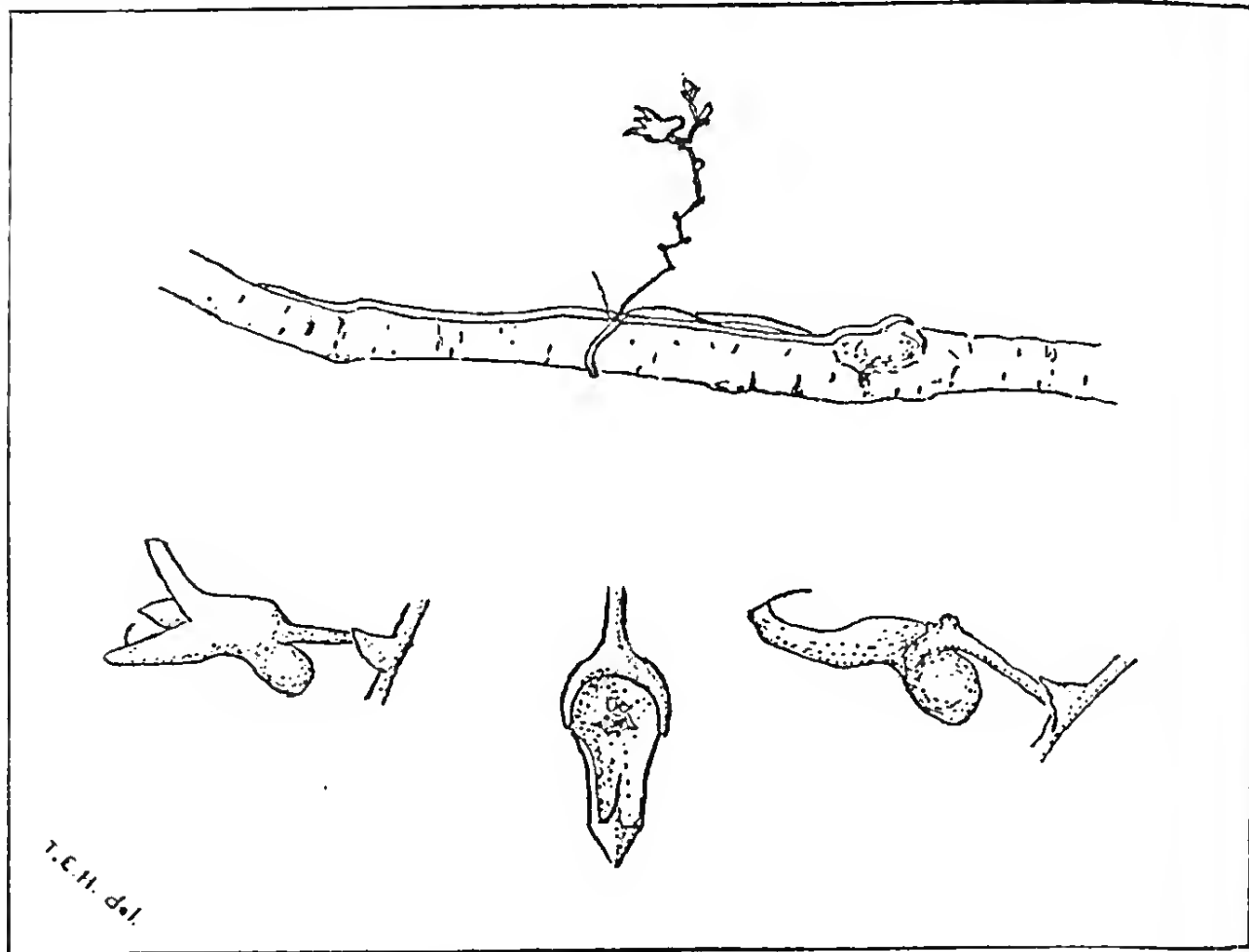
ANOTHER SPECIES OF TAENIOPHYLLUM FROM N.Q.

(T. E. HUNT, Ipswich.)

Taeniophyllum cymbiforme, sp. nov.

Planta parvissima, efoliata. Racemus eirea 1.5 cm. longus; bracteae latae, aetatae, parvissimae, persistentes. Pe-

dicellus eum ovario eirea 2 mm. longus. Flos eirea 4 mm. longus pallido-viridis; perianthii segmenta eirea dimidis longitudinis sepalorum unita;



Taeniophyllum cymbiforme, sp. nov.

(a).—Plant.

(b).—Flower side.

(c).—Labellum from above.

(d).—Labellum from side.

petala sepalis breviora et acutiora; labellum sepalos aequans, integrum, concavum, apice acuminatum et incurvatum; calcar globosum, pellucidulum. Columna brevissima.

Stem minute, leafless. Raceme about 1.5 cm. long carrying up to 12 flowers. Pedicel, with ovary, about 2 mm. long, bracts broad, acute, minute, persistent. Flower about 4 mm. long, pale green, not widely expanding, segments united for slightly less than half the length of the sepals; petals slightly shorter than the sepals and more acute; labellum about as long as the sepals, entire, cymbiform, apex incurved and terminating in a long acuminate point. Spur globular, translucent. Column minute.

Babinda, J. H. Wilkie, 7/46.

Mr. Wilkie's original collection of four plants of *Taeniophyllum* yielded

this species as well as *T. Wilkianum* Hunt, and *T. Muelleri* Lindl., a somewhat surprising occurrence which gives rise to the thought that perhaps the two new species are not uncommon and that investigation amongst these diminutive orchids might bring to light additional species.

Being leafless, the latest addition to the genus could not be distinguished from *T. Muelleri* Lindl. unless flowers were present. The cymbiform labellum, with its long, pointed, incurved tip, is sufficient to separate *T. cymbiforme* from the other Australian species. The specific name has been given in reference to this feature.

As there is never more than one flower open at a time, and each lasts for over a week, the plant is in flower over a period of several months.

FITZROY ISLAND AND THE N.Q.N.C.

To the list of Club field achievements has been added another name—"Fitzroy Island." The comparatively recent inauguration of monthly outings has done much to arouse public interest in our organisation and at the same time is serving to create much in common among those of us, its members, as well as to strengthen that bond of friendship which exists among those who like to wander under the open sky.

To most of us, "Fitzroy" has been little more than a name—since Sunday that name has become more familiar, for early that morning there embarked from Cairns what might have been a major amphibious operation such was the miscellany of gear assembled, cameras, fishing gear and rucksacks predominating, not to mention the now familiar four gallon billy-can, veteran of many such trips.

Two hours punching a stiff sou-easter across Mission Bay, round Cape Grafton and then east to our island destination, did little to question the sailing ability of our members and only served to create a mighty appetite, which needs must be appeased in true Club fashion, immediately upon landing; a process in itself somewhat

prolonged, being achieved with two small dinghies and much elbow-grease.

The island is blessed with excellent anchorages sheltered from all prevailing winds and providing safe harbour for vessels of quite appreciable draught. Fitzroy, our geologists tell us, was once part of the mainland, a mountain peak, granitic in structure, which, subject to a gradual subsidence of the earth's crust, was submerged to its present insular status, while still retaining its continental characteristics.

Our companions, having discovered that even a four gallon billy has limitations, agreed on a 3.30 p.m. rendezvous and then proceeded to investigate the island's possibilities.

Generally vegetation is abundant, though at the time of our visit severely impoverished by the drought which has reduced the water supply to a bare minimum and left the numerous mountain streams nothing but tumbled masses of thirsty rock. For the most part the terrain may be termed parkland wooded with *Casuarina* and bloodwood (*E. gummifera*), the only eucalypt observed, and an occasional turpentine (*Synearpia procera*).

To the few sturdy enthusiasts who accepted the challenge of Fitzroy's solitary peak, survived the rigours of "Gentle Annie," a misnomer one particularly troublesome slope has gained and made, of necessity, a rapid ascent; came reward in a scene of unsurpassed magnificence. From the mighty peaks of Bellenden Ker in the south to Thornton Peak on the northern horizon, as far as the eye could see, towered the mountains of our coastal ranges, seen from a somewhat novel aspect across the intervening expanse of sunlit sea. From this wind-swept elevation, the island dropped away beneath us revealing a small plateau and it was here that the more interesting botanical observations of the day were made.

Most striking of all, but unfortunately not in full bloom at the time of our visit, was *Thryptomene oligandra*, with its small white myrtaceous flowers. This plant has been ob-

served on other local islands, but always at higher altitude.

Another inhabitant of the upper slopes, *Astrotricha pterocarpa*, a relation of the domestic *Aralia*, was observed, with masses of flowers crowning its slender stem. Also worthy of note, particularly on account of its relation to the well known forget-me-not, *Tournefortia argentea*, appeared as it does on so many of these islands, on the beaches with its silvery leaves and massive clusters of white flowers.

The limited time at our disposal curtailed more comprehensive investigation of this intriguing island; indeed, it appeared to be with the greatest difficulty our worthy President succeeded, after much checking and counter checking in his little black book, in assembling the company; a task finally accomplished with the aid of our sturdy friend, the tea billy, battered but beloved object which never fails to exert a magnetic influence on our members, however far afield they may chance to wander.

OUR CHRISTMAS PARTY

(D. BARKUS)

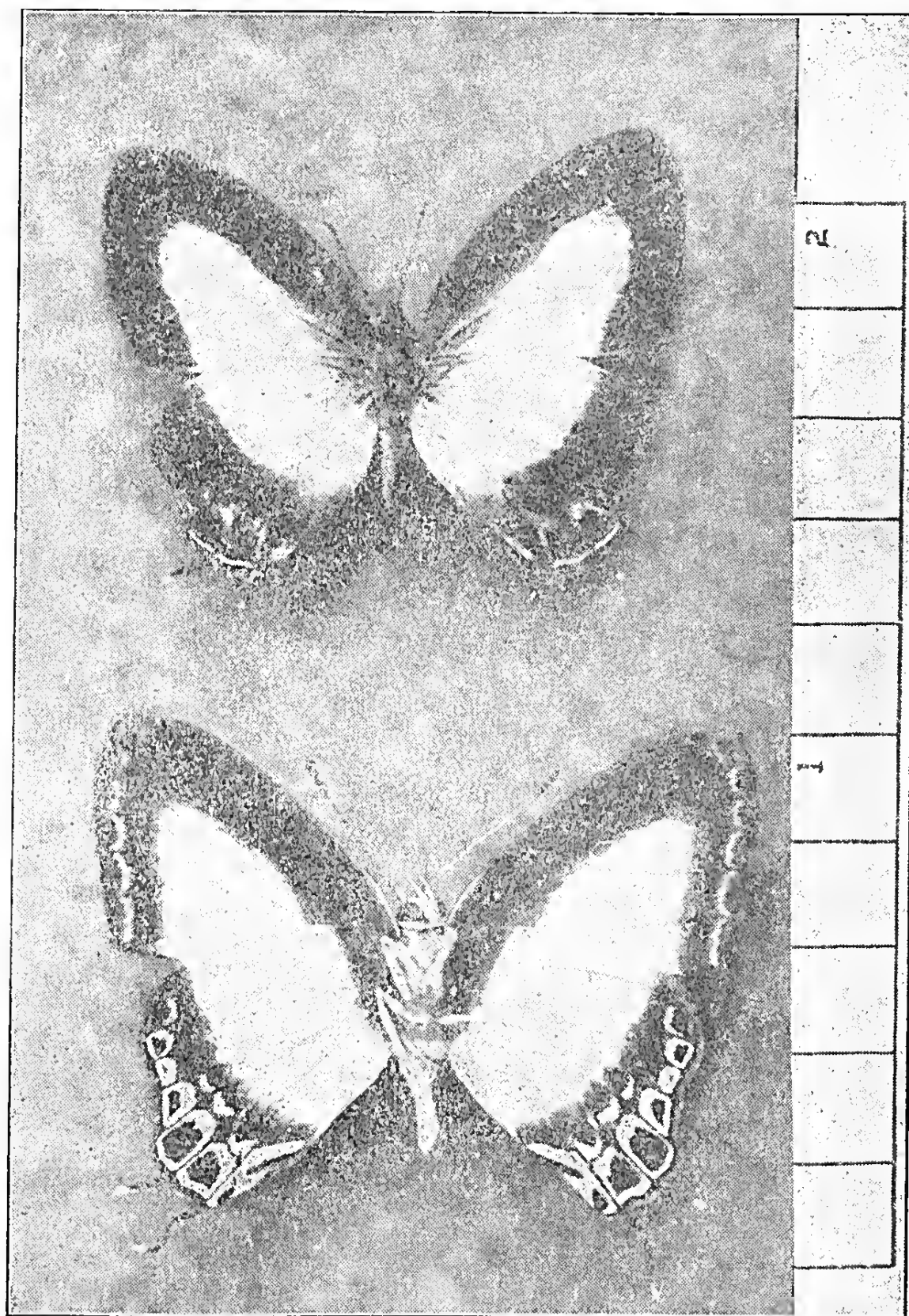
Warm hospitality on the part of Mr. and Mrs. H. Giraud, and a general feeling of festive conviviality amongst the Club members combined to make a gay and happy party at their residence on the 20th December last.

Traditional Scottish style was used in opening the evening's entertainment. A piper lead the way, with Jim Gray as M.C., the President and guests following with laughter and cheers. Over forty enjoyed the fun and few introductions were necessary.

After the presentation of a floral corsage to Mrs. Giraud on behalf of the Club our cheerful cobbler, Jim Gray, made the time go with a swing by his management of the evening's "doings." There were songs for all to sing, with piano accordion accompaniment, bag-

pipes to skirl, interesting competitions, an Indian Club swinging item to watch, and natural coloured movies shown by our President of previous field day trips to Chillagoe, Mungana, Fitzroy Island, Michaclmas Cay, and some garden scenes featuring a small boy present who asked anxiously: "Are you going to show me?" Jim gave us some fine recitations and anecdotes were related by sundry.

The buffet supper provided communally, was literally another event. Mrs. Giraud had made the Christmas cake and it graced the groaning table. Without doubt it was Christmas cheer in the best style and everyone agreed that the Girauds' had set a fine example and we do hope that this party was the forerunner of others to come. We thank them mightily.



Hypolycaena danis turneri, Waterhouse

Vide N.Q. Naturalist, XIV, 81, p. 12.

Each division on scale at right represents one-fifth of an inch.

Photograph by R. B. Williams.

CLUB FIELD DAYS

Since our last issue the Club has held three field days. On 24th November, thirty members and friends visited Fishery Falls; on 22nd December, Tringilburra Creek was visited by thirty members; and on 19th January, the rendezvous was Buchan Point and Cascade Creek with an attendance of twenty-two.

At Fishery Falls the havoc wrought by bush fire in jungle country was very clearly in evidence. The development of various fungi in the scorched bark, and the lifting of patches of bark and entry of borers into the timber were inspected by members. The invasion of thinned out areas of jungle by *Lantana Camara* was also brought under notice.

In this area a dominant tree species was noted to be *Macadamia Whelani*. This species bears nuts up to two inches in diameter, which is considerably larger than those of the related species *M. ternifolia*, the Queensland Nut of commerce. Trees were in full crop at the time of our visit but it was noted that fallen nuts were rapidly hollowed out. The white tailed rat, *Uromys caudimaculatus* Krefft., is reported to be the predator but identification could not be confirmed by the Club as none of the rodents were observed.

Tringilburra Creek has been approved as the source of a new water supply for Cairns City and the Mulgrave Shire. A stream gauge installed on this creek some years ago has shown that the minimum flow, which occurred during the drought season of 1946 was in excess of 5,500,000 gallons per day. Interesting rainfall records, taken in connection with the water supply scheme, at a rain gauge installed on the watershed at 2000 feet elevation are 84 inches in 1946 and 193 inches in 1939. The stream heads in the Centre Peak of Bellenden Ker Mountains.

The country bordering the creek on the western side is largely open forest in which Bloodwood, *Eucalyptus*

gummifera, and wattle, *Acacia aulacocarpa*, predominate. The Grass Tree, *Xanthorrhoea minor*, is a prominent feature on the more rugged parts. The eastern bank shows a great contrast, being jungle clad over practically its whole length above the cultivation area. The creek itself flows over a rocky bed that is thickly boulder strewn. No fish were observed in the section covered by the club, probably on account of the ruggedness and swiftness of flow, but the common fresh water shrimp, *Eupalacmon australis* was fairly plentiful in some of the pools. The common green frog *Hyla caerulea* was observed breeding in water filled rock crevices along the edge of the creek. All stages of the life cycle from egg to young adult frogs were present.

A Nankeen Night Heron, *Nycticorax caledonicus*, apparently killed by a passing car, was collected from the roadside. It has been mounted and added to the museum collection.

On the Buchan Point field day bird spotting resulted in a tally of 24 species observed and identified, and several not sufficiently well observed to identify. Those identified were Peaceful Dove, Welcome Swallow, White breasted Wood Swallow, Indian Myna, Yellow Fig bird, Chestnut breasted Finch, Banded Finch, Red browed Finch, Golden headed Fantail Warbler, Rainbow bird, Wagtail, Peewit, Silver crowned Friar bird, Shining Calornis, Drongo, Dollar bird, Nutmeg Pigeon, Forest Kingfisher, White breasted Cuckoo Shrike, Lewin Honeyeater, Grey breasted Silver-eye, White Egret, Red backed Wren.

The Leguminous tree *Archidendron Lucy*; bearing bright red and curiously curled pods on the trunk, was prominent along Cascade Creek. *Terminalia Catappa* fruits were ripe in numbers. The edible kernels were sampled by members and pronounced appetising.

PUBLICATIONS OF N.Q. NATURALISTS' CLUB.

1. CHECK LIST OF N.Q. ORCHIDS, Mar., 1945, Price 1/-.
2. MARKETABLE FISH OF CAIRNS AREA, Sept., 1945, Price 1/-.
3. CHECK LIST OF N.Q. FERNS, Nov., 1946. Price 1/-.

The North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

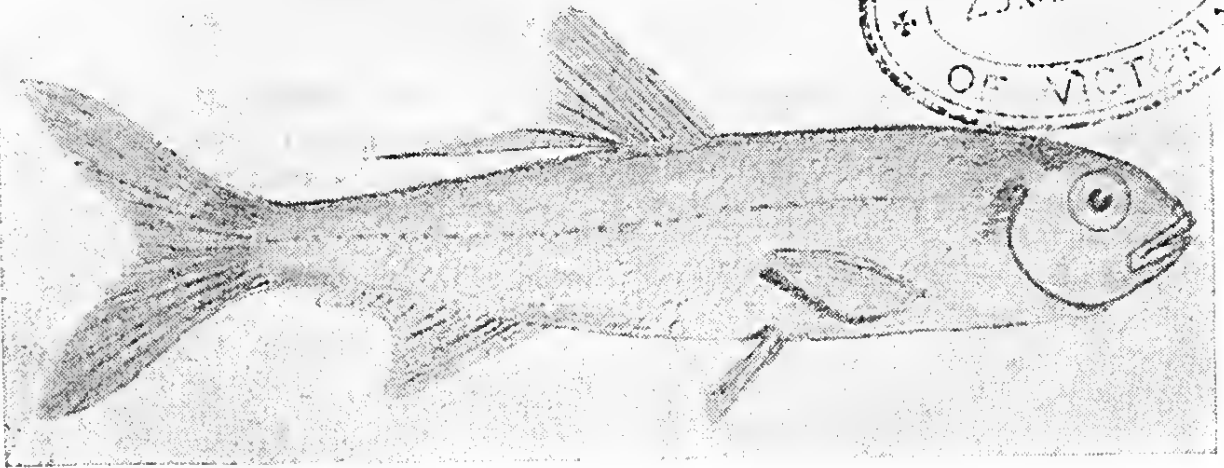
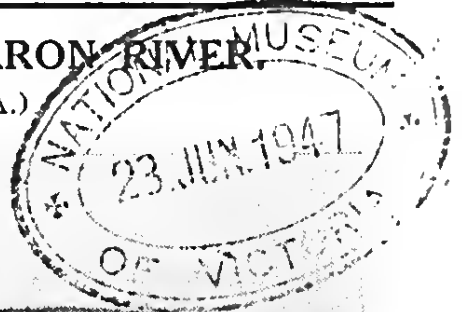
Vol. XIV

CAIRNS, 1st JUNE, 1947

No. 83

FRESH WATER FISHES OF THE BARRON RIVER

(BRUCE SHIPWAY, Perth, W.A.)



MEGALOPS CYPRINOIDES (Brouss.)

The Barron River, near Cairns, North Queensland, is sometimes referred to as the "Barren Barron" when fishes are mentioned.

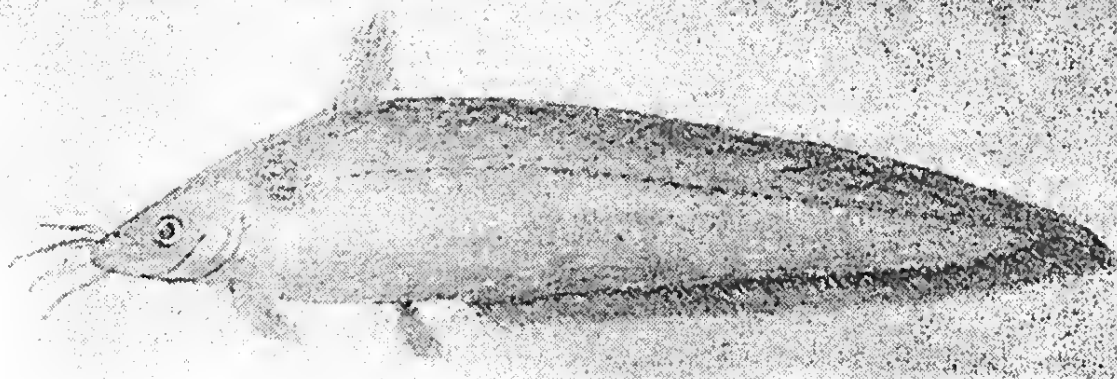
For large edible fishes this is, to a certain extent true, and only to be expected when a natural barrier such as the 800 ft. Barron Falls, situated only about 12½ miles from the mouth, precludes the entry of many of the fishes that alternate between a fluvial and marine existence. The writer had the opportunity, during a recent stay in the district, of investigating these waters, and found them, from a naturalist's view-point, to contain as many, if not more, different genera and species as any river, of comparable size, with which he had previously come in contact. The Barron River is approximately 95 miles long from its source near Mt. Hypipamee to its mouth on the north side of Cairns city. For the purpose of defining the limits of permanent fresh water, all the fishes were obtained above the points where any trace of salinity could be found during a period of the year when the water out-

flow was at a minimum and for a guide, the road crossing at "Kamerunga" and the railway bridge at Freshwater, both places approximately eight miles from the mouth, may be taken as these boundaries.

In all, 19 specimens were obtained—two reported by reliable observers, and two more seen by the writer that proved too elusive to catch with the very limited equipment available.

In the accompanying list and illustrations of the 21 species identified, the writer does not presume to present a full technical description of each of them, but hopes that it may be of interest and some assistance to naturalists and others in identifying the genera and species that are positively known to exist in the fresh waters of the Barron River.

In addition to the fishes, the river has an abundance of amphibious reptiles, crustacea, mollusca, insects and aquatic flora, and it is hoped that a complete biological survey may some day be undertaken, as much of the purity and economic usefulness of fresh water depends on the balance



TANDANUS HYRTLII Sdr.

of life in them. The names of the genera and species have been obtained from the most recent authorities available to the writer, and while some may be changed in the future to comply with the rules of priority, it is believed that these names are now fixed. Reports on new species and habits of those listed would be welcomed by the writer.

References consulted to identify the various genera and species include the following:—

- Australian Zoologist.
- Fishes of S.A. (Waite).
- Fishes of N.S.W. (McCulloch).
- Memoirs Q'land Museum (McCulloch and Ogilby).
- Biology of Fishes (Kyle).

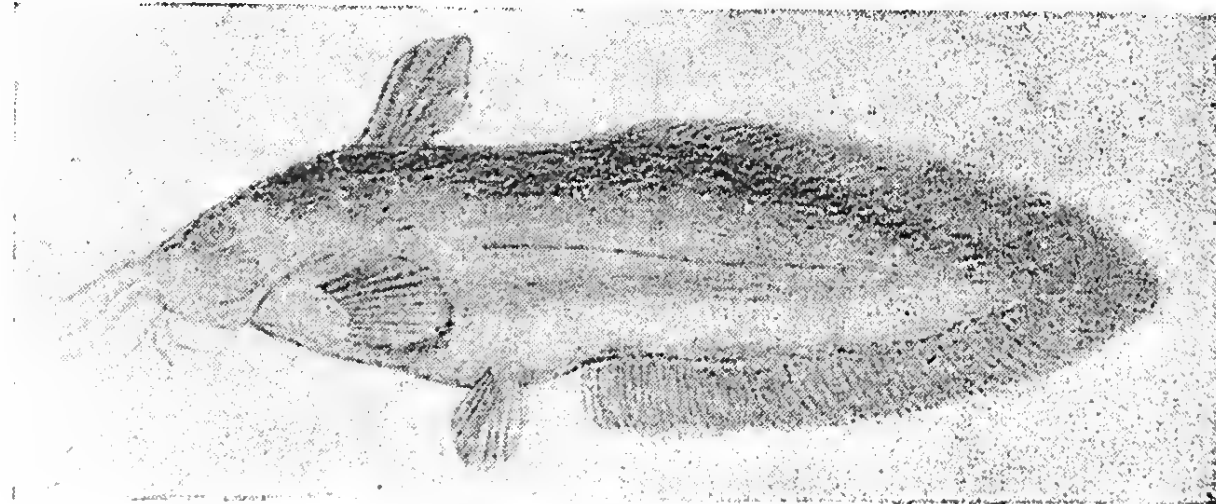
Family PLOTOSIDAE.

Tandanus hyrtlii Steind. Catfish.

Specimen caught in the Barron River above the falls. Medium brown body. Soft dorsal fin absent, anal fin dark orange colour and joined to the slightly pointed caudal. Has venomous spines, capable of inflicting a nasty wound, in the dorsal and pectoral fins. One of the parent fish (information regarding sex desired) carries the eggs in its mouth until the fry are hatched. Food consists of worms, molluscs, etc., found on the bottom of the stream. Length 18 inches.

Tandanus mediobarbis (Ogilby).
Catfish.

Dark grey body. Soft dorsal and anal fins joined to caudal fin. Venom-



TANDANUS TANDANUS Mitchell

Grateful acknowledgment is made to T. C. Marshall, of Queensland Fisheries Department and to G. P. Whitley, of the C.S.I.R., for their identification of some of the lesser known species.

ous on dorsal and pectoral fins. Eggs are deposited in a "nest" of small stones constructed by the male. Food consists of worms, mollusca, etc., found on the bottom of the stream. A

good food fish despite its repulsive appearance. Length to 2 feet.

Family HEMIRHAMPHIDAE.

Zenrechopterus dispar Cuv. et Val.
Spoon-fin Garfish.

Found in the lower reaches of the rivers near Cairns. It is really an

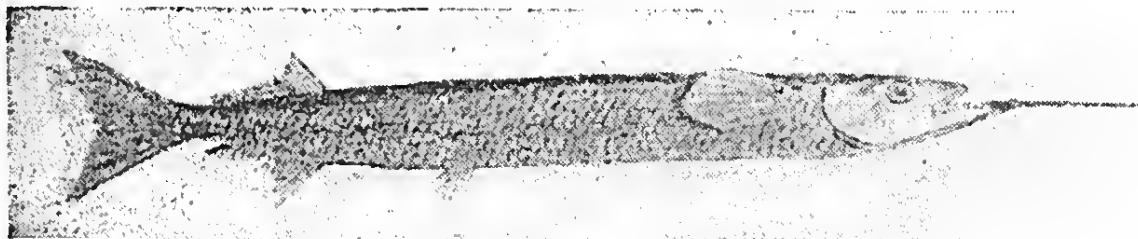
Family MEGALOPIDAE.

(For Illustration see p. 25)

Megalops cyprinoides (Brouss)

Fresh Water Herring.

Principal feature is the long rays of the rear end of the dorsal fin. The fish is of a silvery colour with a pale blue ventral surface. The writer is informed that this fish (length 6 inches)



ZENZRCHOPTERUS DISPAR Cuv. et Val.

estuarine fish but ascends into fresh water presumably for the purpose of breeding. Silver in colour with the peculiar elongated lower jaw typical of the Gar-fish. Length 18 inches.

is identical with the well-known American game fish, the Tarpon, which reaches a length of 5 feet. Further information is desired regarding the habits of this fish, but it is possible it spends the majority of its time in the sea.

ARTIFACTS FROM MIDDENS OF THE TOWNSVILLE DISTRICT

(By Keith Kennedy)

Although the aboriginal population around Cleveland Bay seems to have been comparatively dense, lithic remains found in the district are far from plentiful, and cannot compare in quantity and workmanship with the contents of some of the New South Wales coastal middens. This is probably because of the granitic nature of the country. Granite does not fracture evenly, so is difficult to shape, and, as there is abundance of it, rough pieces would be used as required and then thrown away.

Most of the Townsville middens have been destroyed by modern civil-

isation. There was one on the Strand near Landsborough Street, but, during the last war, fortifications were built on its site, and all traces of the midden obliterated. Another, on Kissing Point, which was also a corroboree ground, has been removed for reclamation of swamp land. At Pallarrenda midden remains can still be seen, also there are remains at the mouth of the Bohle River.

No deep middens comparable to those that occur in Europe have been recorded in Australia, the deepest being not more than three feet, and the majority being merely surface remains.

This does not necessarily indicate that the deposits are not old. Climatic conditions in Europe compelled the pre-historic inhabitants to huddle in caves for a great part of the year, so debris left by them accumulated in definite spots. On the contrary the pre-historic Australians only remained long enough to exhaust the food supply of a locality, and then left for other places where it was more abundant. Consequently traces of their occupancy are scattered over a wide area.

pebbles with pieces flaked off to make a cutting edge. The latter are not to be confused with pebble hand-axes found in other parts of Australia. All three of the above types often show marks of re-touching or secondary chipping.

Some serapers are made of quartz, both crystalline and white. Quartz is a very unsatisfactory material with which to make artifacts as it is refractory, and flakes unevenly, but those gathered have unquestionably been fashioned to make a seraper edge.



MASSIVE SCRAPER
Townsville, N.Q.

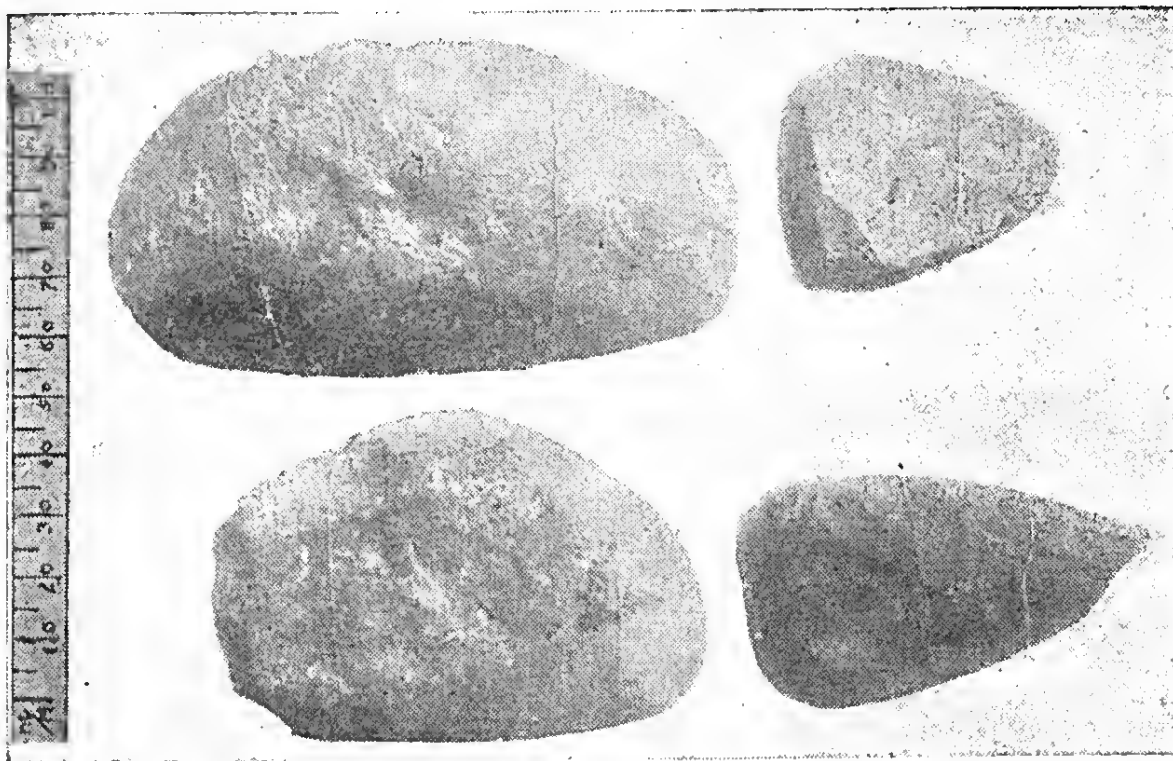
A search through the Townsville middens revealed that the aborigines who occupied them did not specialise in fine work, the bulk of the objects being large, and are as follows:—

Serapers. Artifacts, used for scraping and shaping wooden implements and utensils, known as scrapers, are of various shapes, and derived from three sources: (a) Those made from a flake struck off a piece of siliceous stone, and employed for light work. (b) Large pieces of stone with a chipped cutting edge, used for heavy work, called "core" serapers. (c) Water worn

Concave Serapers. A specialised form with one edge hollowed out to enable it to be used to scrape spears and other cylindrical implements.

Hammer Stones. Made from large water-worn pebbles weighing up to three pounds or more. Can be identified by parts of the outer crust showing marks of bruising when the stone was used as a hammer or pounder. Both the ends and the sides of these stones show signs of usage.

Anvil Stones. Heavy stones on which objects were placed when required to be broken or shaped. There are two



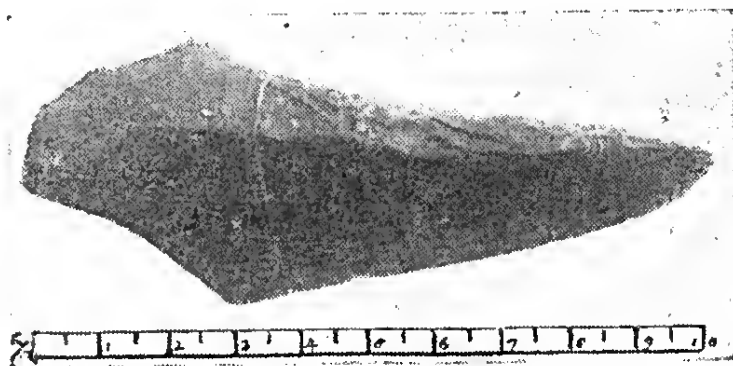
GROUND EDGED SKINNING KNIVES.

The two long oblong specimens from Botany Bay and Pittwater, N.S.W.
The two small triangular specimens from Townsville, N.Q.

kinds—those with a plane surface, and those with a small depression on the surface in which nuts, and probably shells, were placed to be cracked; or the ends of wooden implements such as spears could be placed in the depression to steady them while being shaped.

ally diorite, which, in some parts of Australia, was quarried by the natives and traded long distances.

Axe Heads. When the axe blank was required to be converted into an axe, one edge was ground on both sides, and a handle affixed. Naturally all axes found in middens are haftless—



LARGE CHIPPED-BACK KNIFE

from Townsville, N.Q. Length 93 mm.

Axe Blanks. Discoid pieces of volcanic rock roughly shaped to the form of axe-heads were kept by the aborigines until required to be made into the finished axe-head. They were made from large flakes, conveniently shaped pebbles, and solid rock, usu-

the handle having disintegrated.

Skinning Knives. These are very rare, and, so far, I have only two from this district. The working ends are ground, and the implements can best be described as miniature axe heads. They were used for skinning animals.

Flake Knives. Elongated flakes struck from a core and hafted with gum. In the Northern Territory similar flakes were also mounted as spear points. Those found in the middens have lost their hafts; possibly some were used un-hafted.

Chipped-back Knives. Specialised implements made from elongated flakes, but with the side opposite the cutting edge chipped down to a plano-convex surface, making the knife roughly triangular in section. The chipped back is probably for resting the fore-finger on to give pressure while cutting. The few I have gathered near Townsville are all large, the largest being 9.3 cm. in length. It is interesting to know that chipped-back knives, or points as they are sometimes called, are found in various parts of the world, and have caused much speculation as to their use. Those in Australia are of all sizes, grading down from that mentioned above to as small as 15 mm. On account of their size the smaller ones are called pigmy

points, and need a magnifying lens to show up the minute workmanship bestowed on them.

The foregoing is a list of the lithic forms that I have gathered in the Townsville area. Other forms might come to light in the future, or have been found by other collectors, so the list must not be deemed as complete.

In conclusion I would like to advise collectors of artifacts that, unless the locality in which they were found is marked on them, they are worthless from a scientific point of view. It is also an advantage to have the date of finding and the initials of the finder added. The usual method of marking done in museums is with India ink applied with a sharp pointed pen. Paper labels are not reliable as they tend to become un-gummed and often become re-attached to the wrong specimens. Some collectors number their specimens and keep a catalogue, but it has happened in the past that catalogues have become lost or destroyed, leaving the collection meaningless and useless for comparative study.

A NEW SPECIES OF DENDROBIUM FROM THE BELLENDEN KER RANGE.

(T. E. Hunt, Ipswich)

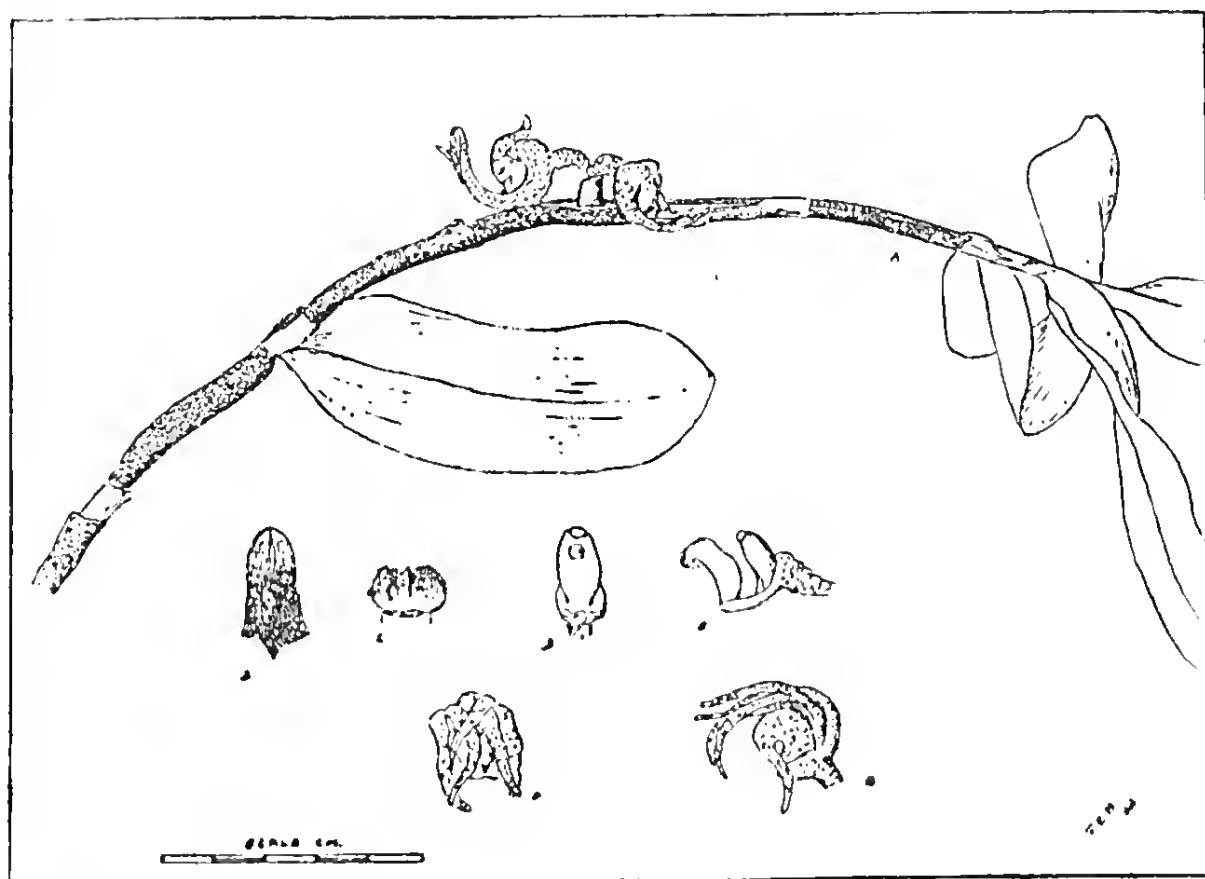
DENDROBIUM CANCROIDES sp. nov. Caules circa 60 cm. alti et 4 mm. lati, compressi, bases foliorum persistentes scabrae. Folia elliptica, circa 7 cm. longa et 2.5 cm. lata, emarginata. Flores duo in racemis brevi axillari-bus. Pedicelli albi tuberosi, circa 5 mm. longi. Flos circa 2 cm. longus rubido-fuscus; basis alba; segmenta incurvata, tuberosa. Sepala circa 2.2 cm. longa, linear-lanceolata; calcar breve, obtusum. Petala circa 1.8 cm. longa, linearia. Labellum circa 1 cm. longum, trilobatum inaequaliter, pilosum, curvatum, apice reflexum; lobi laterales erecti acuti; lobus intermedius paululus, acutus; discus linea, una, alta, undulata, alba. Columna brevis, crassa. Anthera parva, viridis.

Stems numerous from a shortly creeping rhizome, up to 60 cm. high,

erect or somewhat curved, compressed, about 4 mm. wide, rather woody in texture; nodes about 20, carrying the persistent, scabrous, long sheathing bases of the old leaves, and rather deep, elliptical pits, left by the old racemes and surrounded by the scarious remains of the bracts. Leaves few, towards the tops of the growing stems, elliptical, about 7 cm. long and 2.5 cm. wide, emarginate, lamina glossy above, dull below, mid-rib well defined, sheathing base scabrous, green at first, becoming a bright red-brown with the casting of the lamina and decaying to grey. Flowers in pairs at the nodes, appearing at intervals. Peduncle about 3 mm. long, stout, white, with several short, broad, sheathing bracts. Pedicel, with ovary, white, about 5 mm long, tuberculate, curving sharply so

that the back of the dorsal sepal tends to touch the stem. Flowers not opening fully, about 2 cm. long, reddish-brown with a whitish base, all segments curved and twisted, thick in texture, tuberculate. Sepals about 2.2 cm. long, linear-lanceolate, forming with the short, broad, column foot a

D. cancroides is very closely related to a group of New Guinea species, being nearest perhaps, to *D. Gjellerupii* J. J. Sm. It differs from that species in the shape of the column and anther, the length of the column foot, the calli and cilia of the labellum, and in the form of the persistent leaf bases.



DENDROBIUM CANCROIDES sp. nov.

Scale refers to A. Parts B. to G. enlarged.

short blunt spur; petals about 1.8 cm. long, linear; labellum about 1 cm. long, curved for its full length, apex sharply reflexed, obscurely 3-lobed, lateral lobes erect, acute; mid-lobe minute, acute; the whole of the labellum inside matted with dense creamy cilia; plate with a single raised, somewhat undulate whitish line which fades away about half way along. Column short, stout, with an undulate margin behind the small, green anther; stigma immediately below the anther, deep, oval; column foot about as long as the column, broad.

Bellenden Ker Range, J. H. Wilkie, October, 1946.

Its nearest Australian affinity would be with *D. luteocilium* Rupp.

The flower bears a strong resemblance to the head and legs of the well-known hermit-crab, as they are seen projecting from the shell it inhabits, and it is to his that the specific name refers.

The large plant sent by Mr. Wilkie, to whom, once again, goes the credit for the discovery of another new species in North Queensland, continued growing strongly in my glass-house and produced a pair of flowers in November of last year and another pair in January.

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at School of Arts, Shields Street, Cairns.
usually on second Tuesday in each month, at 8 p.m.
NEXT MONTHLY MEETING, TUESDAY, 10th JUNE, 1947.

FIELD OBSERVATIONS

By R. B. Williams

Our journal being a quarterly, three excursions have been conducted since these notes last appeared, with a most enthusiastic attendance of members and visitors.

Crystal Cascades, intake site for our city water supply, was the scene of the February outing on the 23rd of that month. This area proved rich, not only in botanical material, but investigation of the creek waters yielded numerous crustacean specimens, duly preserved for identification and exhibition. It may be of interest to note, that, in collecting these creatures, our specialist advises a strong soapy solution as a killing medium. Use of these before immersion in the preservative, prevents unsightly dismemberment, frequently evident in bottled specimens.

One other zoological prize, and one whose capture alive and intact provided no little excitement, was a snake (*Natrix mairi*). The subsequent dispatch of this reptile without damage was only achieved with some difficulty as the killing bottle available was of test-tube proportions.

March field day found the club activities located further afield; Pretty Beach, on the Cook Highway having been selected for investigation. The journey from Cairns is particularly worthy of mention, if only for the profusion of flowering plants evident, making the steep sides of the coastal road a veritable garden, with their vari-coloured lines. Most striking were two members of the *Hibiscus* genus; *H. rhodopetalus*, with large red blooms; and *H. radiatus* whose flowers are predominantly white veined with pink.

Of interest to the botanists of the party was the discovery of *Eriosema chinensis* a member of the Leguminosae hitherto found only as far south as Cooktown.

The foreshore at low tide proved a great attraction and yielded up a wealth of material; most worthy of note being the discovery of a large colony of black spiny urchins, thirty or more, fearsome in appearance, but harmless creatures that required a certain amount of agility and perseverance to dislodge them from their rocky wave swept domain, for close inspection.

Among the numerous Algae present was noted *Gracilaria confervoides*—source of Agar Agar, invaluable as a culture medium in the laboratory and also widely employed as a jelly agent in the meat canning industry.

Rendezvous for April was Barron Waters, and on arrival the party was ferried to the upper end of the pool inside the Barron Gorge, which rendered exploratory work very arduous. *Brassia*

actinophylla, the umbrella tree, is prominent on both slopes of the gorge and the numerous specimens were in late flower. The native fig, *Ficus chretoides* not yet in full fruit, colonies of blue faced lorilets, *Opopsitta leadbeateri* were not in evidence. A deserted nesting colony of the Shining Calornis was observed. These birds have migrated during the period intervening between our February and April excursions. Butterflies were very numerous, particularly the brilliant Ulysses, *Papilio ulysses*.

FIELD DAYS

23rd February: Crystal Cascades. Attendance 25.

23rd March: Pretty Beach. Attendance 27.

27th April: Barron Waters. Attendance 42.

25th May: Barron Heads.

22nd June: Campbell's Creek.

MEETINGS

10th March: Monthly meeting. Lecture: "The Headwaters of Tringilburra Creek," by Mr. R. H. Rudge.

3rd April: Social evening at the residence of Mr. and Mrs. H. O. Barkus, Edge Hill.

8th April: Monthly meeting. Lecture: "Gardens of Mt. Lofty Ranges of South Australia," by Mr. H. C. Whibley.

6th May: Monthly meeting in conjunction with the Board of Adult Education. Display of the autumn foliage from the garden of Mr. Dave Whibley, Stirling West, S.A. Lecture: "What causes autumn tints," by Dr. H. Flecker.

NEW MEMBERS ELECTED

10th March: Mrs. V. I. Stack, 157 Lake Street, Cairns; Dr. Desmond Bracken, Gordonvale; Mrs. D. Braeken, Gordonvale; Mr. Pearson, Commercial Bank of Australia; Mrs. Pearson, ditto; Mr. A. J. Shaw, Lake Street, Cairns; Mr. Reichardt, Hoare Street, Cairns; Mrs. Schonfeldt, Charles Street, Cairns.

8th April: Mr. R. Le Rossignol, 91 Esplanade, Cairns; Mr. V. I. Stack, 157 Lake Street, Cairns; Mrs. G. Mortison, c/- Mrs. Atherton, Abbott Street, Cairns; Mr. Schonfeldt, Charles Street, Cairns; Mr. Les Keough, Toumoulin.

The North Queensland Naturalist

The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. XV

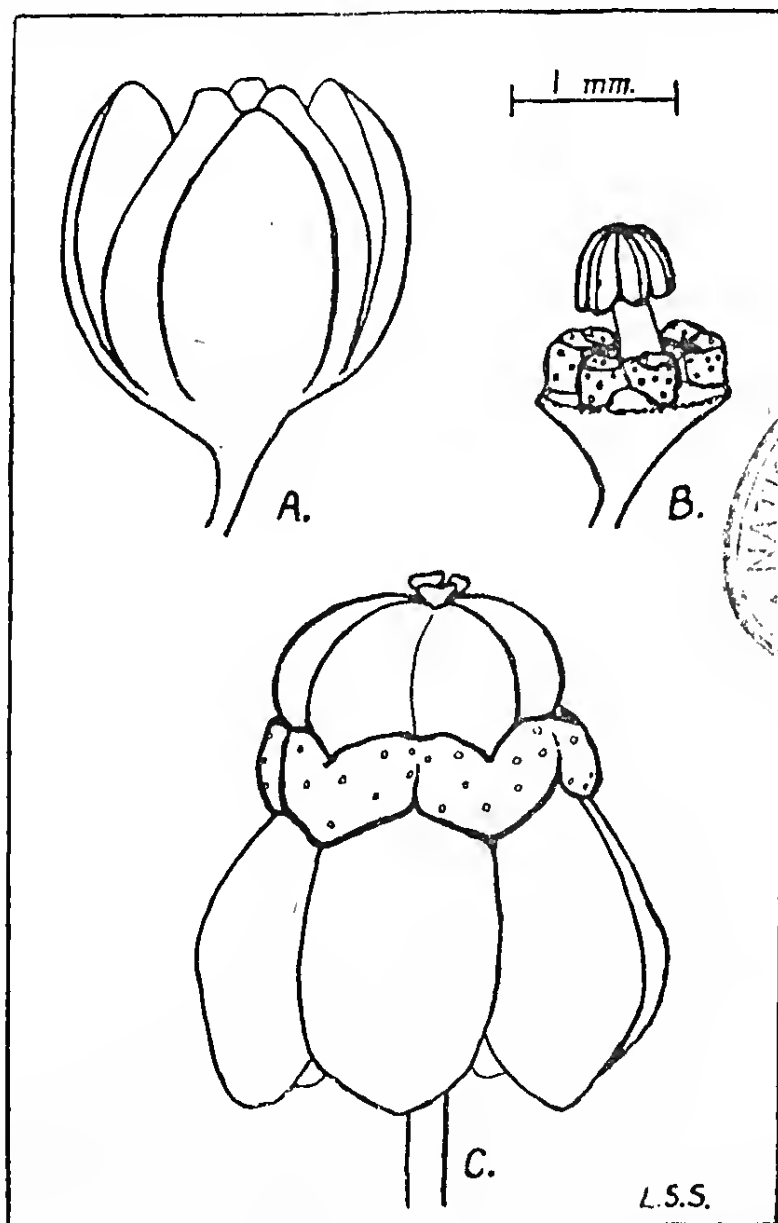
CAIRNS, 1st SEPTEMBER 1947

No. 84

PHYLLANTHUS CLAMBOIDES (F. MUELL.) DIELS. A LITTLE KNOWN NORTH QUEENSLAND PLANT.

(By L. S. SMITH, B.Sc., Botanic Museum and Herbarium, Brisbane.)

In 1876 Mueller described a plant, was unfortunate, as it is an illegiti-
collected by Fitzalan from the Dain- mate one, being a later homonym, and



PHYLLANTHUS CLAMBOIDES (F. Muell.) Diels.

A. Male flower. B. Male flower, with perianth removed. C. Female flower.

tree River, as *Leichhardtia clamboides*
and placed it in the family *Menispermaceae*. His choice of a generic name

must therefore be rejected under Art. 61 of the International Rules of Botanical Nomenclature. Robert Brown had

already validly published a genus *Leichhardtia* (misspelt *Lelchardtia*) in 1849, which was later reduced to a synonym of *Marsdenia* R. Br. (Asclepiadaceae). As Fitzalan's specimen bore male flowers only, as one might expect, it would be difficult to place the plant with any degree of certainty.

Diels, in his Monograph of the Menispermaceae (1910), followed Mueller in including *Leichhardtia* in the Menispermaceae but did not provide a new name for the genus. However, he admitted its doubtful position and makes the remark "... tamen an non re vera Euphorbiacea quaedam sit drupis ignotis vix decidi potest."

Immediately following the publication of Pax and Hoffman's account of the Euphorbiaceae in Engler-Prantl Naturl. Pflanzenfam. 2 Aufl. 19c. 64 (1931), Diels finally appears to have recognised the true affinity of *Leichhardtia clambooides* with a small group of plants from New Guinea and the Solomon Islands, which comprised *Phyllanthus* Sect. *Nymania* (K. Schum) J. J. Smith. In his paper entitled "Aufklärung der Gattung *Leichhardtia* F. Muell." (1931), he makes the new combination *Phyllanthus clambooides* as well as describing a few more allied species from New Guinea and listing those already known belonging to the section. One of the species mentioned, namely *P. insignis* (K. Schum.) J. J. Smith in Nova Guinea VIII. 781 (1912), requires a new name. The combination is a later homonym of *P. insignis*. Muell.-Arg. in DC. Prodr. XV, ii. 1271 (1866), and in consequence must be rejected. That this latter name was validly published has been kindly checked by Mr. H. K. C. Mair at the National Herbarium, Sydney. The new name *Phyllanthus Schumanniana* L. S. Smith is hereby provided.

In this same paper Diels reduces *Phyllanthus* Sect. *Nymania* to a synonym of *Phyllanthus* Sect. *Leichhardtia* (F. Muell.) Diels, apparently basing the change on the fact that the generic name *Leichhardtia* (1876) is older than *Nymania* (1905). However, Art. 58 of the International Rules of Botanical Nomenclature states that the earliest name bearing sectional rank

must stand. As *Nymania* was reduced to sectional rank in 1912 and *Leichhardtia* in 1931, the former name must obviously be used for the section.

The combination *Phyllanthus clambooides* was made without female flowers of the plant having been seen. So far as I am aware, specimens of this plant have not been collected since the type gathering until a short time ago a specimen bearing both male and female flowers was received at the Queensland Herbarium, Brisbane, for identification, from the North Queensland Naturalists' Club. This specimen shows that Diels was correct in removing the species to the family Euphorbiaceae and placing it in the genus *Phyllanthus*. It also enables the following more complete description of the plant to be prepared.

Phyllanthus clambooides (F. Muell.)
Diels in Notizb. Bot. Gart. Berlin, xi. 310 (1931).

Leichhardtia clambooides (F. Muell.)
Fragm. x. 68 (1876); F. M. Bail. Queensl. Fl. i. 33 (1899); Diels in Engl. Pflanzenreich iv. 94, 184 (1910) et fig. 66.

A shrub or small tree (?). Branchlets hollow, flexuous, glabrous, light to dark brown or sometimes blackish, more or less finely longitudinally striate, towards the apex angular, otherwise terete; internodes up to 4 cm. long but usually less. Stipules paired, persistent, attached by a broad base, broadly ovate and obtuse or more or less semilunar and rounded at the apex, 1-3 mm. long. Petiole glabrous, narrowly winged in the upper part, 3-5 mm. long. Leaves alternate, distichous, the lamina papyraceous to thinly coriaceous, drying dark green above and paler beneath or somewhat brownish, glabrous, lanceolate or elliptic-lanceolate, 7-14 cm. (18 cm. sec. Mueller) long, 3-6 cm. wide, obtusely acuminate at the apex, broadly cuneate or frequently, more or less rounded at the base, margin entire, often slightly recurved, midrib elevated on both surfaces, more so beneath, lateral nerves 8-12, curvedly ascending, more prominent beneath, secondary and tertiary nerves obscure above, slightly prominent beneath.

Inflorescences paniculate, many-flowered, 1-3 in each leaf axil or pseudo-terminal, bearing either male or female flowers, or when more than one in each axil sometimes the central one bearing female flowers and the lateral ones male flowers, male inflorescences up to 20 cm. long, female ones up to 12 cm. long; bracts minute, more or less denticulate, 0.25-0.775 mm. long; pedicels clustered or sometimes solitary, capillary, 3-7 mm. long, those of the female flowers slightly more robust. **Male flowers** greenish, in bud subglobular; perianth erect, glabrous, segments 6, obtuse, 1-nerved, imbricate, in two series, the outer ones elliptic, ca. 1.8 mm. long, the inner ones broader and obovate; glands of the disk 3, bilobed or bipartite, opposite the outer sepals, glabrous, fleshy, foveolate, ca. 0.75 mm. wide, 0.3-0.4 mm. thick and high; stamens 3, opposite the disk-glands, filaments united into a glabrous column ca. 0.5-0.6 mm. long, anthers subsessile cordate-ovate, very obtuse, ca. 0.5 mm. long, erect and opening by two longitudinal slits, connective broadened towards the base. **Female flowers** not seen in bud; perianth strongly reflexed, glabrous, segments 6, obtuse, 1-nerved, imbricate, in two series, the outer ones elliptic or oblong elliptic, ca. 2-2.5 mm. long, the inner ones broader and obovate; disk thick, fleshy, foveolate, ca. 0.5-0.7 mm. high, lobed around the base opposite the sinuses between the sepals and less so on the upper side opposite the mid-nerves of the sepals, more or less vertically grooved between the basal lobes; ovary glabrous, depressed globular, ca. 1.8 mm. diam., 1.25 mm. long, 3-furrowed with 3 shallower furrows midway between the main

ones, 3-celled; ovules pendulous from near the upper angles of the cells, 2 in each cell, collateral, carunculate; stigmas 3, subsessile, very broadly compressed-pyriform, truncate or emarginate at the apex. **Fruit** unknown.

QUEENSLAND:— Cook District: Daintree River, Fitzalan; Freshwater Creek near Cairns, L. Wright, N.Q.N.C. No. 10457, 7-10-1946 (Flowers greenish).

Although Mueller described the species as a twining shrub, it seems probable that this was merely a guess on his part, based on the knowledge that this is the typical habit of members of the *Menispermaceae*. This is further borne out by the fact that probably the majority of Fitzalan's specimens were unaccompanied by notes. Actually all of the known species belonging to *Phyllanthus* Sect. *Nymania* range from shrubs about 1 m. high to small trees of 6-7 m.

What appears to have been a cause of Mueller's incorrectly placing our plant is his mistaking the disk-glands of the male flowers for petals. In describing another North Queensland plant as *Callicoma Stutzeri* (now *Pullea Stutzeri* (F. Muell.) Gibbs, I notice he has also made the same error of describing disk-glands as petals. Whereas Mueller gives the number of these "petals" of *Leichhardtia clamboides* as 3, Diels (1910) raises the number to 6 in his account of the genus, while in the description of the species he refers to them as "staminodia (petals ?)" and gives the number as 4-6. Actually, at times, the glands are so deeply divided that they look more like 3 pairs of glands rather than 3 single ones.

BARRINGTONIA ACUTANGULA AS FISH POISON. A PRACTICAL APPLICATION.

(By T. CARR, late Lieut., 17th Pl., V.D.C.)

A practical demonstration of the use of the roots of *Barringtonia acutangula* was made by the 17th Platoon of the V.D.C. on 24th October, 1943. These roots are usually found in abundance along the head waters of the Mitchell River and its tributaries, and are known locally as "Freshwater Mangrove." Being found in the dry

bed and along the banks of the rivers, the roots are often exposed by the action of floods. Six men were able to collect eight corn sacks of roots, chopped into convenient lengths of about 15 inches, in an hour and five minutes on each side of the Little Mitchell River Road Crossing.

The Mitchell River above its junc-

tion with Rifle Creek towards the end of the year is reduced to a series of water holes, many of them deep and permanent. The water-hole selected for this experiment was 52 yards in length and about 25 yards wide at its widest point.

Before dusk on 23rd October, the eight bags of chopped roots were placed in position around the edge of the waterhole with lengths of wood to pound the roots upon. A few trunks and branches of the *Barringtonia* (about 150 lbs.) which were growing at the waterhole were chopped and split up and thrown into the centre of the waterhole, as it was feared that not enough roots had been prepared, but this precaution was found unnecessary.

At 5.10 a.m. next morning six men commenced pounding up the roots with tomahawks and axe heads and throwing the crushed roots into the water in front of them.

At 6.5 a.m., the water immediately in front of each man appeared slightly discoloured and when agitated froth arose to the surface. This was particularly pronounced in front of one man who was pounding up the roots thoroughly.

All the roots were crushed by 7.40 a.m. The first fish appeared on the surface at 7.45 a.m. just as breakfast was starting and almost immediately the whole surface of the water was teeming with fish.

Archer fish (*Toxotes chatereus*) were plentiful and many jumped clear of the water. Catfish (*Tandanus hyrtlii* and *T. mediobarbis*), one 25 lbs. in weight, appeared to be less tolerant of the poison than the other kinds. Gar (*Zenrochpterus dispar*) "black bream" and "finger-marks" appeared about the same time.

"Jew Fish" did not appear until 8 a.m., when a large water snake (*Natrix mairi*), also appeared. At 8.14 a.m., the only "Rock Cod" was caught. Fish were caught with two and three pronged spears which must be strong. Some fish were killed with an axe.

No attempt was made to stir up the water for the reason that more fish were obtained than were required, and with the large number of catfish and "jewfish" on the surface of the water it was not considered advisable. At 10.15 a.m., only a few fish were seen near the surface and at 11 a.m. with the exception of some fish, mostly eatfish, which appeared as though they would not recover, many small fish were seen swimming about in quite a normal condition.

Three corn sacks of good edible fish, half of them cleaned and filleted were taken to Molloy and it is estimated that an equal amount was left behind on the banks of the waterhole. It is believed that if the water had been stirred up a much greater number of fish would have been taken.

A LARGE FORM OF *DENDROBUIUM RIGIDUM* R. BR.

T. E. HUNT, Ipswich.

By air mail to-day, I received some very interesting flowers of *D. rigidum* R. Br., sent by Mr. Tierney of Cairns. I understand they came from plants collected in the Portland Roads area. They are much larger and more brightly marked than those usually seen and there seems to be a more definite tendency to produce a raceme rather than solitary flowers. One peduncle measured 2 cm. with four large flowers, each on a pedicel 1 cm. long. The sepals and petals are 9 mm. long and recurved. The petals are linear-spathulate, acute. The sepals and spur are densely covered outside with minute crimson dots. The

labellum is as long as the other segments. The lateral lobes are very strongly marked with bright crimson lines. The mid-lobe is very much larger than the laterals, is recurved, thick in texture and deep yellow with numerous dots and lines of crimson on both its upper and lower surfaces. The plate is whitish above with the typical three raised lines and there is a very fine channel on the under surface.

Altogether this is a superior form of a very attractive orchid but as it differs from the typical plant only in size and depth of colouring, it is not worthy of varietal standing.

FRESH WATER FISHES OF THE BARRON RIVER.

(BRUCE SHIPWAY, Perth, W.A.)

(Continued)



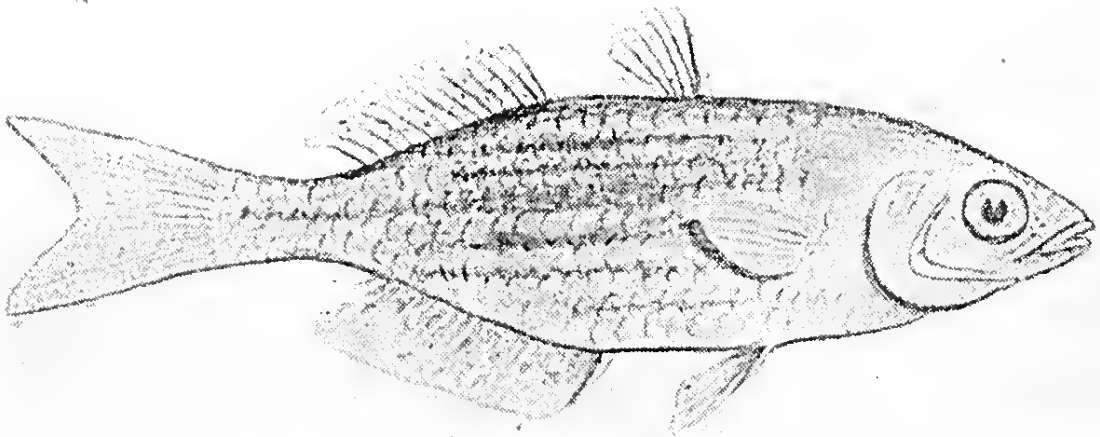
ANGUILLA REINHARDTII Stdr.

Family ANGUILLIDAE.

Anguilla reinhardtii Stdr. (Eel.)

Common above and below the Barron Falls and in billabongs. Colour, light brown with numerous patches of

dark brown parallel short stripes. The young are sometimes caught ascending rivers from the sea where the mature eels breed. Mostly carnivorous in habit and usually feed at dusk or night time. Length 4 feet.



MELANOTAENIA NIGRANS (Richardson)

Family ATHERINIDAE.

Melanotaenia nigrans (Richardson)

Jewel fish or Fresh water Sun Fish.

Considerable confusion exists regarding the name of this beautiful fish. It has been caught in various localities on the North-East coast of Australia and is subject to variation due to locality and age. It is known under the names of *Atherina nigrans*, *Strabo nigrofasciatus* and several others, none of which do justice to the colouration

of this little fish. It was exported to the U.S.A. by the Americans many years ago and is now a popular exotic aquarium fish in that country. It is a valuable destroyer of mosquito larvae with a rapacious appetite and penetrates into the smallest creeks and streams in search of food. It deposits adhesive eggs in dense patches of water plants. It reaches a length of 3 inches in the upper reaches of the Barron River and about 5 inches in the lower reaches.

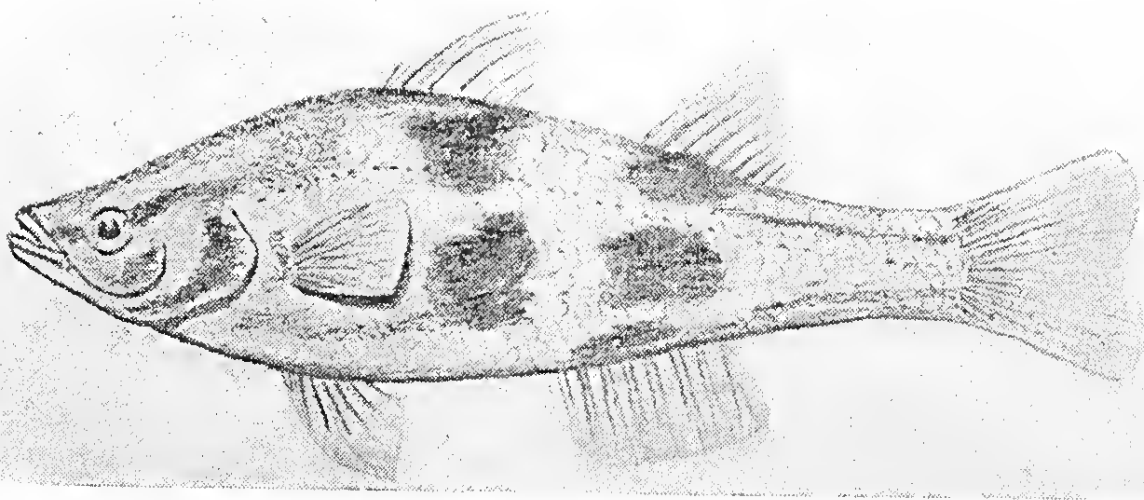
Family ATHERINIDAE.

Pseudomugil signifer (Kner.).

Blue-eye.

Common among the clumps of *Elo-dea* in the lower Barron River. This pretty little fish is noted for the development of the dorsal and ventral fins of the male during the breeding season. Normally of an olive-green with a silver belly and an iridescent blue circle around its eye, the male's fins become elongated and change colour to an opaque pale blue with a trace of

gold. The fish is a valued destroyer of mosquito larvae and the writer believes it was exported to the U.S.A. some years ago for this purpose. It deposits its adhesive eggs among water plants. It is a popular aquarium fish owing to its brilliant colouration and lively habits, but its nervous system is somewhat delicate and a sudden shock, such as tapping the glass of an aquarium is liable to cause death. It is a rapid consumer of oxygen and will not stand overcrowding. Length one and a half inches.



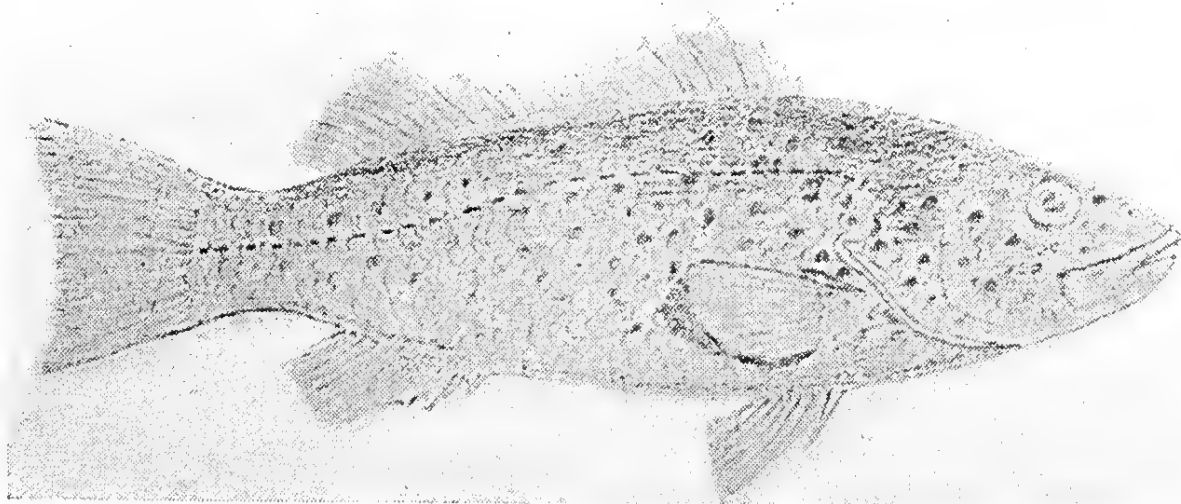
GLOSSAMIA GILLII (Steindaehner)

Family APOGONIDAE.

Glossamia gillii (Steindaehner)

Specimens were obtained in the lower reaches of the Barron River. The fish is brown in colour with large darker brown blotches. It frequents the deeper holes in the river and usu-

ally feeds off the bottom amongst dense patches of water plants. It is a fairly sluggish fish in its movements and is believed to belong to the "mouth-breeder" group, that is, one of the parents (information desired) carries the eggs in its mouth until they are hatched. Length 5 inches.



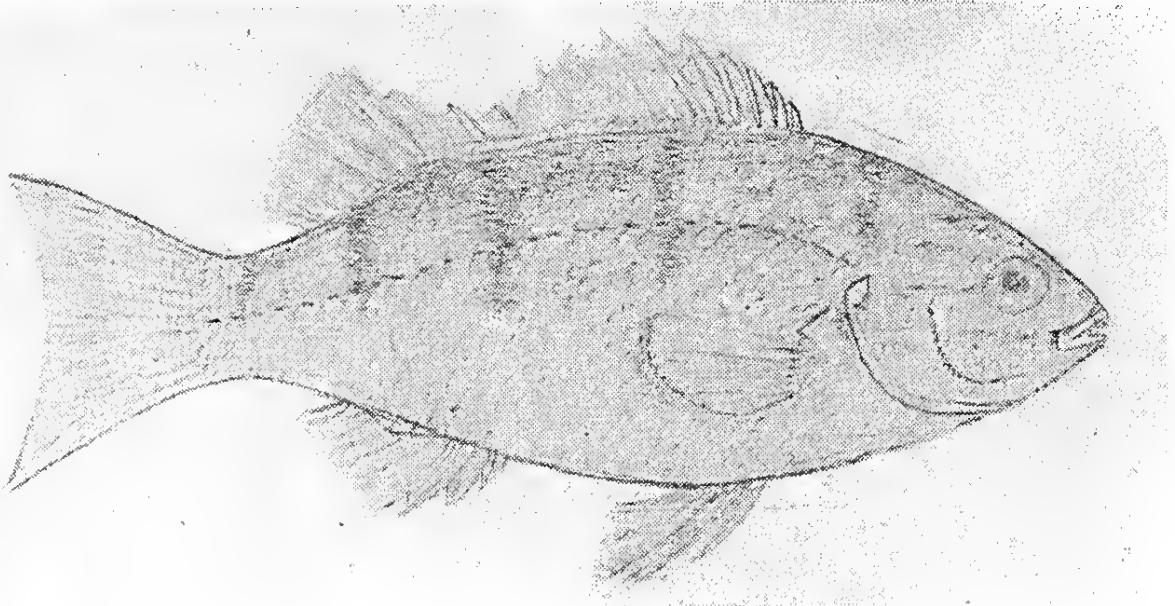
KUHLIA RUPESTRIS (Lacepede)

Family KUHLIIDAE.

Kuhlia rupestris (Lacepede).
Flagtail.

Common below the falls in the Barron River and the Mulgrave River. Dark brown on the dorsal surfaces fading to a light shade on the belly. Two prominent vertical stripes on the extremities of the bilobed caudal fin are responsible for its popular name.

The lateral line is clearly marked and each scale has a dark edge. When one of these fish is caught on a fishing line the rest of the fish in the pool follow it to the surface and from then on, for quite some time, refuse to take the bait. Information is desired on the breeding habits of these fish. It is possible the fish breeds in salt or brackish water. Length 10 inches.



THERAPON PERCOIDES (Gunther)

Family SERRANIDAE.

Therapon percoides (Gunther). Black Striped Grunter.

From the upper reaches of the Barron River. Dorsal surfaces dark blue grey shading to a pearly white on the lower surface with five narrow vertical black stripes. Two rows of dusky

spots on the soft dorsal and numerous blue spots on the caudal fin. This fish has been found as far afield as the Swan River, Perth, W.A., and derived its name from the peculiar noise it makes when captured. Its breeding habits are probably the same as *T. unicolor*. Reaches a length of six inches.
(To be continued.)

CLUB ACTIVITIES

R. B. WILLIAMS

Three months have passed since these notes last appeared and in that time club activities have, if anything, shown signs of intensification.

Three field days have been conducted with the usual efficiency, both of transportation and organisation, and all were marked by excellent prevailing weather conditions. Scene of the first outing of the quarter was Barron Heads, easily accessible from Machan's Beach, after quite a brief walk. It was during the course of

this walk, in fact, that two of our members suffered an experience not at all enviable, in that they gained first hand experience of the caustic properties evidenced by the sap of that local menace, the Tar Tree.

In their enthusiasm over certain orchids they overlooked the presence of danger in the fallen branches of a tree felled in clearing operations, and it was not until the effects revealed themselves in the form of ugly red weals that they realised their mis-

fortune. There is no accepted antidote for these burns, but the application of methylated spirits in this case effected some relief and has since been recommended by our two friends.

In June a slight alteration was made to the programme of walks and Upper Stoney Creek was chosen as our goal. The train journey from Cairns almost solved the transport problem, but not entirely, according to one brave soul—this confession being made at the top of a three hundred foot pinch on the mountain slopes above the railway line.

Few passengers on the range railway have a true conception of Stoney Creek Falls, the view from the bridge depriving them of a more magnificent sight only a few hundred feet away, hidden by the protruding out-crop.

Stoney Creek in its upper reaches is a placid stream wandering through densely-timbered country and only occasionally winding its way through rocky defiles, until, without warning, in a smooth glassy jet, it plunges over the upper falls before turning at right angles and appearing in full view for the less adventurous to see.

The last Sunday in July saw the club again in the field, this time at Campbell's Creek. For months Campbell's Creek has been discussed with interest, and Sunday's outing proved that interest was warranted. All agreed this area to be unexcelled for its wealth of tropical material, not to mention the delightful aspects of the creek itself, with long tumbling cascades and shady tree-lined pools.

From a rendezvous at the foot of the hills most of the party ascended to the second cascade before they were forced to turn back, not by the nature of the terrain, but the lateness of the hour.

Mention must be made here of a more recent club outing, in conjunction with the Junior Nature Lovers' Club, during the course of which the Kamerunga section of the Barron River was combed by these young enthusiasts, who with several members of the senior organisation, and other school representatives, conducted a "bird spotting" expedition in that area. No less than fourteen different species were detected and eagerly noted, not to mention a multitude of other observations made by these sharp-eyed young people.

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at School of Arts, Shields Street, Cairns.
usually on second Tuesday in each month, at 8 p.m.

ANNUAL MEETING, TUESDAY, 9th SEPTEMBER, 1947.

Business: Annual Report, Balance Sheet, Election of Officers, etc.

FIELD DAYS

25th May: Barron Heads. Attendance 29.

22nd June: Stoney Creek, Upper Reaches. Attendance 20.

27th July: Campbell Creek. Attendance, 25.

24th August: Walsh's Pyramid. Attendance 18.

28th September: Double Island

26th October: Grey Peaks.

23rd November: Stoney Creek Falls to Barron River.

MEETINGS

9th June: Notes on N.Q. Birds by Arthur J. Moran.

8th July: Social evening and conversation.

12th August: "Living on the Land," by Gordon B. Stephens.

NEW MEMBERS ELECTED

9th June: Messrs. J. H. Holliday, Box 456, Townsville; D.H.Q. Whaling, Buchan-street, Cairns; C. Freeman, Atzemi Flats, Ingham.

8th July: Mr. Arthur Fielding, Big Tableland, via Cooktown; Mrs. F. J. Irvine, Woree; junior member, Miss Hilda Irvine, Woree.

10 DEC 1947

The

North Queensland Naturalist

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Vol. XV

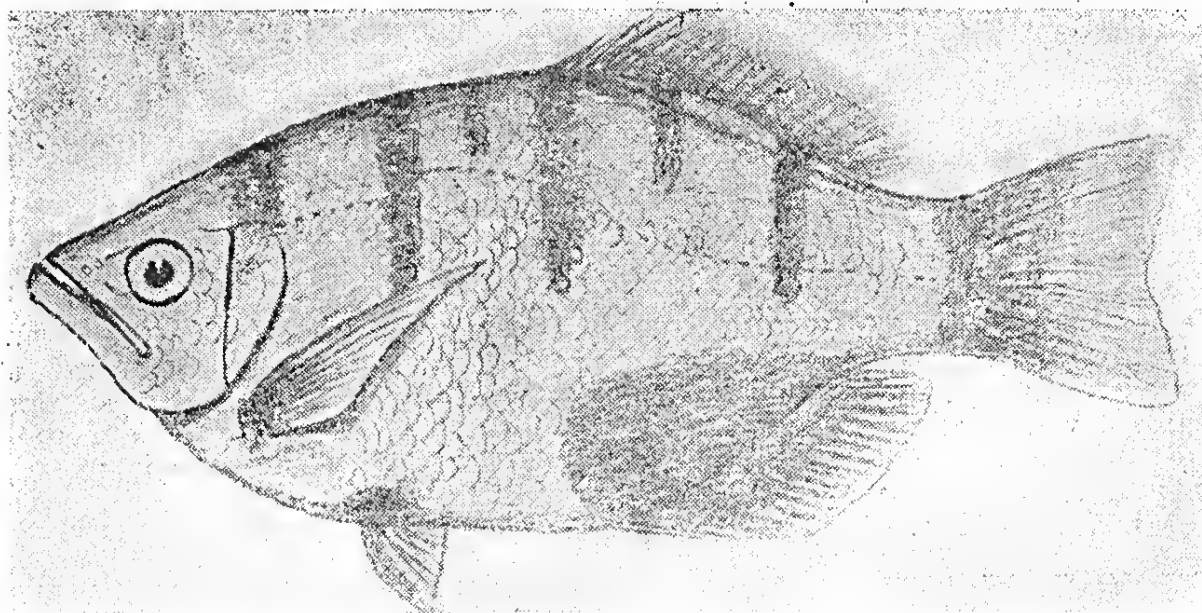
CAIRNS, 1st DECEMBER 1947

No. 85

FRESH WATER FISHES OF THE BARRON RIVER.

BRUCE SHIPWAY, Perth, W.A.

(Continued)



TOXOTES CHATEREUS (H. Buchanan)

ARCHER FISH.

Family TOXOTIDAE.

Toxotes chateus (H. Buchanan).

Archer-fish.

This fish was not obtained from the Barron River itself by the writer, but was caught in adjoining streams. However, reliable local observers report its presence in the Barron and it should therefore be included in the list.

This genus has a world-wide reputation, often greatly exaggerated by misleading cartoon strips, etc., published in various newspapers, and it may be as well to describe its peculiar performance and what actually does happen. It derives its popular name from its habit of forcibly ex-

PELLING drops of water from its mouth at flies and insects resting on twigs or leaves overhanging the water. It rarely misses and has an accurate range of about 2 feet. An examination of its rather big mouth shows no particular difference in structure and it certainly cannot purse its lips as a human being does. It swims near the surface of the water and its prominent dark brown vertical bands against an almost cream background make it an easy fish to see. The dorsal fin is placed far back to allow the fish to take up its "firing position" and the anal fin is nearly half covered with scales. The fish usually illustrated is not the Australian *T. chateus* but the *T. jaculator* of the East Indies. Length 12 inches.

Therapon unicolor (Gunther).

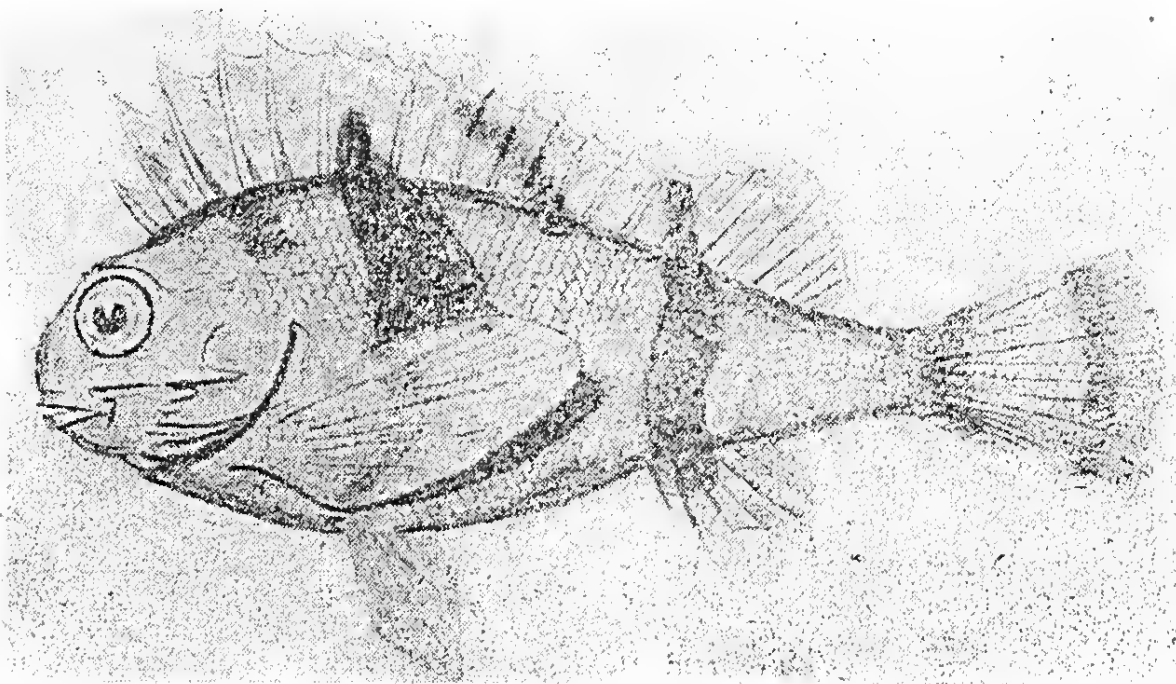
Spangled perch.

Possibly no other fish has such a wide distribution. The writer has caught them in the Upper Barron River and the Fortescue River of North West Australia and points in between. The name, **unicolor**, is an unfortunate choice and is possibly the result of the fish being classified from a bleached museum specimen as it is quite a handsome fish being of an olive green and brown flecked with gold spots.

Numerous cases of fish "coming down with the rain" have been investigated by the writer and the fish in question has invariably turned out to be the above species. In the claims that the fish must have come down with the rain it is always stated that "after the rain stopped" the fish was found miles from any water hole. It is natural for a person to seek shelter during a heavy rain storm and therefore the claimant does not witness the arrival of the fish. What actually happens is as follows. The fish live in various rivers that dry to a series of water holes and in due course eat out the available food supply. The fish is of a voracious and energetic type

and when a heavy shower of rain causes numerous small rivulets and streams to run into the water holes, the fish ascend these looking for food. The writer has followed fish not two inches long for a distance of over 10 miles at a speed of approximately two miles an hour along a wheel track over what was normally spinifex desert. Immediately the rain ceases most of the little rivulets stop running and the small fish are left stranded high and dry maybe twenty miles from where they started. The older fish seem to have developed more cunning or perhaps they realise the value of patience since they never attempt to leave their pool.

The breeding habits are similar to the common goldfish and is conducted in an "en masse" fashion. The males and females not making any particular attempt to pair off. The females shedding their eggs in masses of water plants. The eggs are demersal and adhesive. The parents are cannibalistic with their eggs and fry. Although the fish does not attain a weight in excess of half a pound it is an excellent food fish, the flesh being equal to some of our best marine species.



NOTESTHES ROBUSTA (Gunther)

Family SCORPAENIDAE.

Notesthes robusta (Gunther). Bullrout

This fish frequents the estuary waters but often penetrates fresh

waters. As with the preeeding fish, specimens were not obtained but reliable reports indiate the fish is found in the Barron. It is closely allied to the Fortescue (*Centropogon australis*) having 15 dorsal spines compared with 16 on the Forteseue. It is a sluggish fish, spending the majority of its time on the bottom amongst plants and rocks. Great care should be taken by bathers when this fish is believed to exist in the vicinity as it is possessed of venomous spines. A wound by these spines is liable to

ease severe pains and extreme prostration for a period of several days. Dr. L. Kesteven writing on the venom of the Bullrout and other fishes advises treating the wounds the same as for snake-bite, that is, making an incision and applying permanganate of potash. The fish is of an ugly appearance, a mottled brown in colour and may be handled by the pectoral fins if it is necessary to pick one up. The spines are in the dorsal fin and on the operculum alongside the head. It reaches a length of about 8 inches.

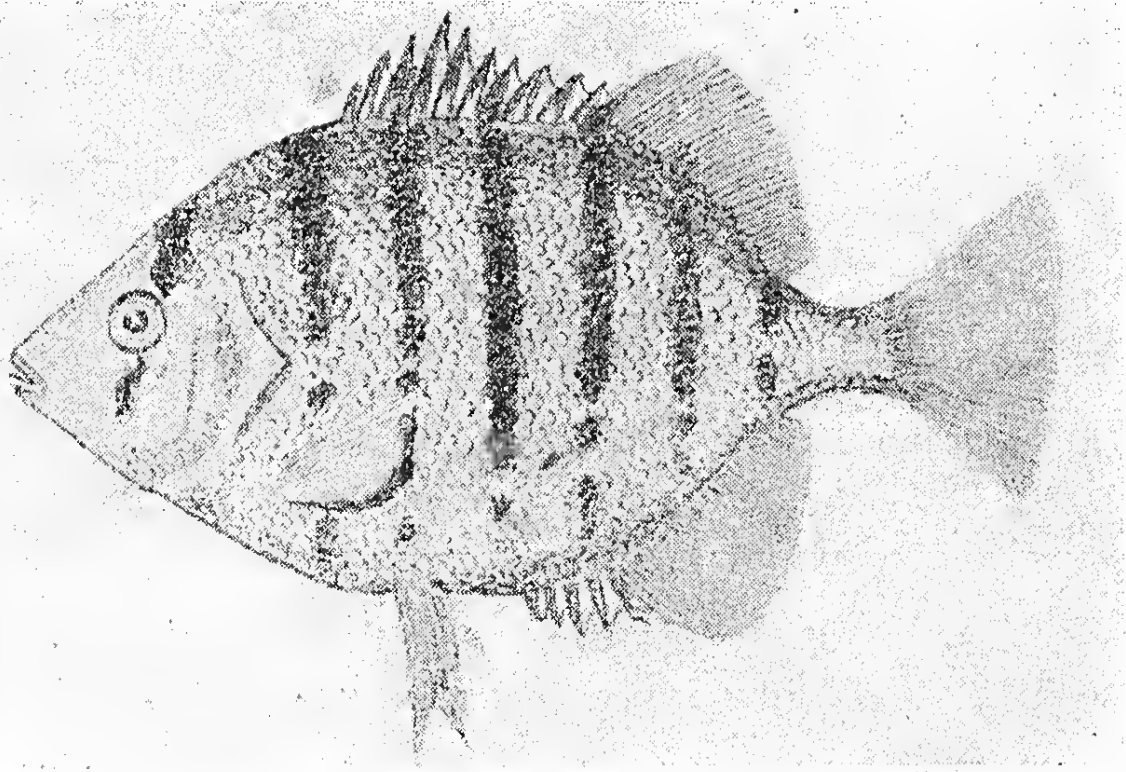
Family GERRIDAE.

Gerres punctatus Cuv. et Val.

From the lower Barron River.

This fish has a distinetive development of the first ray of the spinous dorsal fin. The ray has grown several times the length of the remaining rays and has a small fleshy appendage on its extremity. Of what use the fish makes

of this is not known. It is of a silver colour with a series of brown vertical bands on the upper portion of the body, with a brilliant irideseent pale blue ventral surface. Breeding habits are unknown, but it is possible it spawns in salt water. It is a very lively fish and would make an interesting aquarium subject. Length 6 inches.



SCATOPHAGUS AETATE-VARIANS De Vis

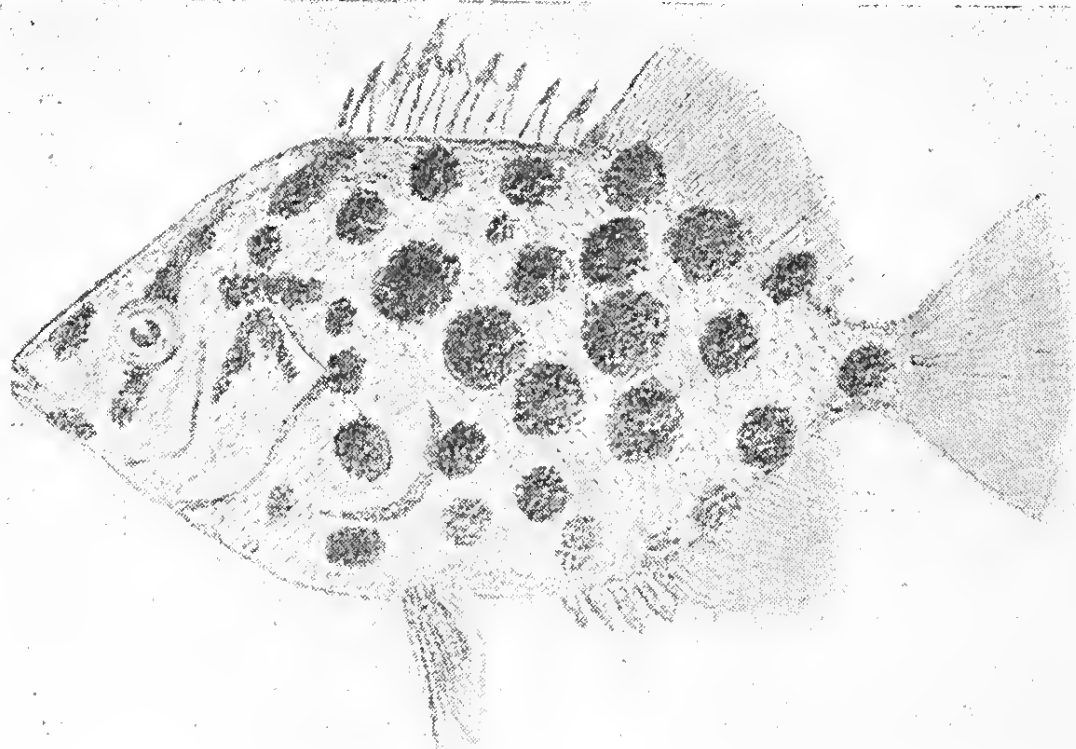
Family SCATOPHAGIDAE.

Scatophagus aetate-variens De Vis.

Banded Johnny-dory.

An estuarine fish that penetrates into fresh water and usually travels in schools. This fish may be identified

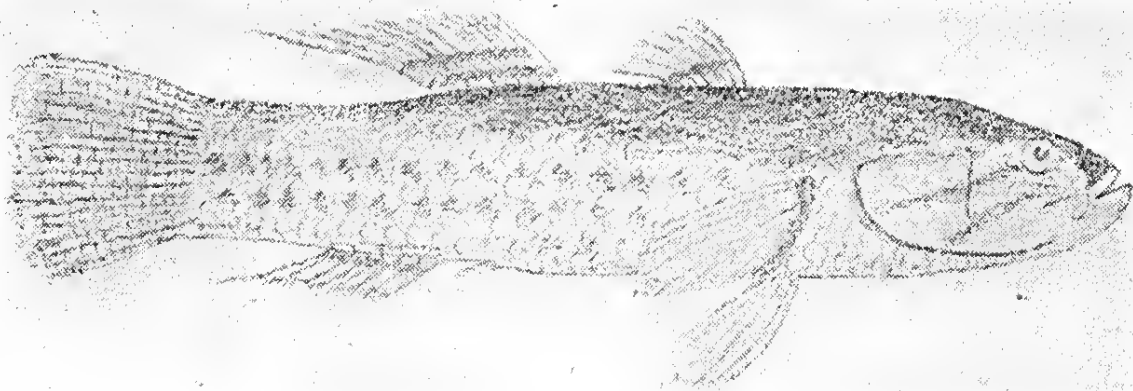
by its almost disc-like shape and a series of dark brown vertical stripes. The dorsal and anal fins extend to the base of the caudal fin. The fish lives quite a long time in an aquarium or pond where it does valuable work in cleaning up surplus algae. Length 12 inches.



SCATOPHAGUS ARGUS (L.)

Scatophagus argus (L.). Spotted Johnny-dory (Spotted Butterfish). This species has similar habits to

the *S. actate-varians* and is of the same shape. Instead of stripes the fish is spotted. Length 12 inches.

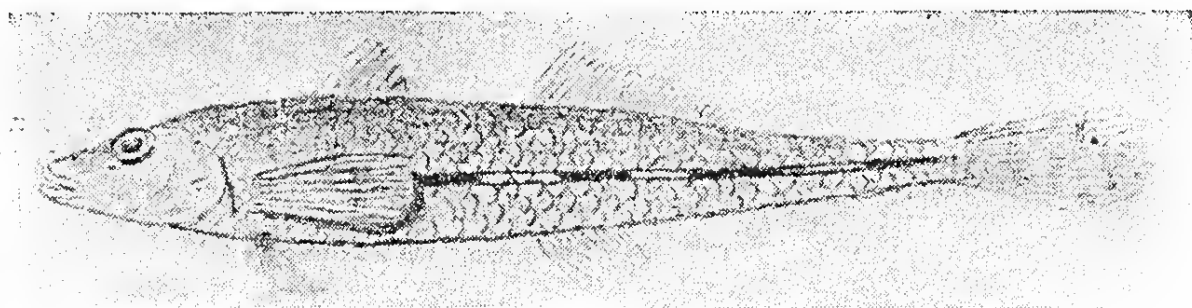


OPHIOCARA APOROS Bleeker

***Ophiocara aporos* Bleeker**

Specimens were obtained in the lower reaches of the Barron River and in some of the small swamps near the river. This large gudgeon is a beautifully coloured fish. The back is a dark brown changing to a vivid orange on the ventral surface with a series of crimson spots along the sides. Three purple stripes radiate from the

eyes across the operculum and the dorsal fins are yellow, blue and crimson. The fish is usually found on the bottom of the river, but was seen in large numbers resting at the surface, presumably for extra oxygen, in some small semi-stagnant pools. Breeding habits possibly the same as *M. m. adspersus*. Length 10 inches.



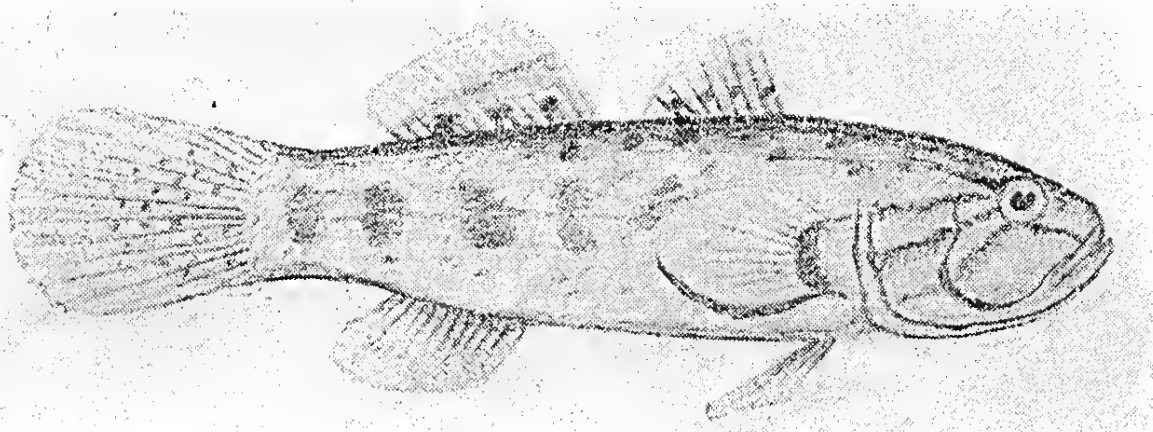
GLOSSOGOBIUS GIURIS (Buehanan)

Family GOBIIDAE.

Glossogobius giuris (Buehanan). Goby.

Frequents the lower reaches of the Barron River. A light olive green in colour with a narrow intermittent brown stripe along the lateral line. The fins are colourless. It is a slug-

gish fish and spends most of its time on the bottom of the stream. It is extremely hardy and is indifferent to the state of the water, being equally at home in fresh or brackish water. It belongs to the rather extensive *Gobiidae* family and deposits its eggs among the rocks. Length about 3 inches.



MOGURNDA MOGURNDA ADSPERSUS Castelnan

Mogurnda mogurnda adspersus
(Castelnau). Purple-striped Gudgeon.

A pretty little gudgeon that derives its name from the spots along its body and the stripes on its gill covers. This fish has been a popular aquarium fish in Australia and Overseas for many years. It is extremely hardy and, for a gudgeon, quite lively. It will breed in captivity in a small aquarium of five gallons or more where its habits may be conveniently studied. The male selects a small rock or flat surface and after cleaning it, induces the female to deposit her eggs in a cluster about one and a half to two inches

in diameter on the top of the rock. The eggs are adhesive and remain fixed to the rock. After fertilisation the male drives the female away and mounts guard over the eggs, fanning a constant stream of water over them to keep them aerated. The male at this time becomes quite pugnacious and will drive away any other fish, regardless of size, approaching the site. After two to four days, according to the temperature, the eggs hatch and the male is relieved of his responsibility and the young fry seek shelter among the surrounding water plants. Length 4 inches.

A NEW SPECIES OF ERIA FROM N.Q.

(Family ORCHIDACEAE)

T. E. HUNT, Ipswich.

Eria queenslandica sp. nov. Rhizoma repens. Pseudo-bulbi 4-6 cm alti, teretes, virides, erecti. Folia duo, circa 15 cm. longa, elliptica, emarginata, petiolata. Racemus 3-4 cm. longus, plumosus; bractae circa 4 mm. longae, acutae. Flores, circa 12, cum ovario circa 6 mm. longi, plumosi, pedicelli brevissimi. Sepala lateralibus acuta, basibus latis; calcar latum, obtusum; sepalum dorsale angustius, acutum; petala sepalos aequans, lanceolata, acuta; labellum glabrum, integrum, ovatum, apice recurvato, lamina jugis duobus glabris. Columna brevissima.

Rhizome shortly creeping. Pseudo-bulbs 4-6 cm. high, terete, about 1 cm. in diameter, green, erect, youngest ones clothed with 3 or 4 large, sheathing, scarious bracts. Leaves two at the summit of the pseudo-bulbs, slightly twisted, about 15 cm. long and 2 cm. wide at the widest part, elliptical, keeled, minutely emarginate, bases tapering to rather long petioles which are broader on the lower leaves than the upper. Raceme 3-4 cm. long, hoary, with about a dozen almost sessile, dingy-pink, hoary flowers, bracts about 4 mm. long, acute, scarious.

Flowers reversed, about 6 mm. long, including the ovary and very short pedicel, not widely expanding. Lateral sepals acute, tapering from a broad base and forming with the column foot a very short blunt spur; dorsal sepal narrower; petals almost as long as the sepals, lanceolate, acute; labellum reddish, glabrous, sessile at the end of the column foot, entire, broadly ovate with a minute apiculate recurved tip, plate with two slightly raised smooth ridges extending from the base to about half-way along. Column excessively short, reddish at the top.

Bellenden-Ker, J. H. Wilkie, September, 1946.

This species is very closely allied to *E. eriaeoides* (Bail) Rolfe, and difficult to separate from it unless flowers are present. It differs from that species mainly in the structure of the labellum, which is entire with two raised lines, that of *E. eriaeoides* being 3-lobed with three longitudinal nerves. It differs also in having more acute segments, this being particularly true of the dorsal sepal, and it also has relatively longer petals.

FOOD PLANTS

COMMON TO BIRDS AND INSECTS

(R. L. HUNTER, Barron Waters.)

EVODIA ELLERYANA F. Muell.

The *Evodia Elleryana* is a large scrub tree generally found near streams and marshy country. The tree is very shapely, makes a beautiful shade, and bears big bunches of pinkish coloured flowers along its branches during January.

The leaves are the food of what is probably our most beautiful butterfly—*Papilio ulysses joesa* (Butler). The tree is also the food plant of a very fine moth—*Antheraea janetta* (Wh.).

The honey from the flowers is much sought for by bird and beetle. When in full bloom hundreds of the Rainbow Lorikeet—*Trichoglossus moluccanus*

Gmelin—frequent it and their noisy chatter is kept up all day. The beautiful Cetoniid beetles frequent it in dozens, particularly *Lomaptera yorkiana* (Jans) and *L. duboulayi* Thoms.

PANAX ELEGANS F. Muell.

This is another of our scrub softwoods that grows to a height of about 30 feet and is very soft. The timber is brittle and winds blow it about a great deal.

This is one of the food plants of our largest and well-known moth *Coscinoscera hercules* (Misk.), and another food plant of *Antheraea janetta*. I have also found larvae of a moth of the Catocalinae group feeding on it.

A very distinct beetle also feeds gregariously on it. This is one of our largest Chrysomelids—*Aesernia australasiae* Jac.—a yellow and green insect.

The fruit of *Polyscias*—berries borne in large quantities on the top of the tree—is one of the favourite foods of the Brown Pigeon, *Macropygia phasianella* (Temminck).

FICUS EHRETIODES F. Muell.

Perhaps no other tree in the rain forest is so popular with birds and insects as the *Ficus ehretioides*. The tree is practically an evergreen, and when grown in the open is very shapely. It bears large quantities of fruit which are carried in large clusters along the stem from six inches off the ground, and along all the branches, the fruit hanging in large festoon like bunches. The young fruits are green and ripen to a bright red and look very attractive.

The leaves are the food of butterflies of *Euploea* spp.. The large Phasmatids, *Extatosoma tiaratum* (Macl.) live practically their whole lifetime in its branches, devouring the leaves. At times the Greyback sugar cane beetle, *Dermolepida albobirtum* (Waterh.) practically defoliates the trees.

The fruits when green, are eaten by the pretty little fig parrot, the Red-browed Lorilet, *Opopsitta leachbeateri* (McCoy). This little bird is very trusting and when feeding, very, very quiet. Only the dropping of the discarded skins of the fruit as the parrot seeks the seeds, denotes its presence. I have approached to within a few feet of the parrots when feeding and they remained undisturbed.

What a contrast is another eater of these figs, the giant Fruit Bat or Flying Fox of the genus *Pteropus*, Busson, whose squeals and squeaks can be heard miles away.

The ripe and rotting figs are very attractive to some butterflies, especially *Mycalesis terminus*, *M. sirius*, and *Melontes leda banksii*.

The above insects are mostly day feeders. Shine a torch on a bunch of ripe figs at night and what a change! Gone are the parrots, butterflies and beetles (for the green *Cetonids* also frequent the fruit in hundreds) and in their place are the beautiful under-winged moths of the *Catocalinae* group—moths which have their forewings patterned as dry leaves, but with beautiful hind wings. The torch light shows dozens of red, fiery eyes as the moths are feeding around clusters of red ripe fruit. Disturb the tree and one sees flashes of orange, (from *Ophideres materna* and *O. fullonica*), pink (from *Phyllodes meyericki*), blue, and salmon, as moths of the group fly away, opening their wings and showing their full beauty.

Some of the figs grow over the river and as the fruit falls into the water it is quickly taken by Flagtail fish—*Kuhlia rupestris* (Lacepede).

Should the tree be damaged and branches broken off *Cerambycids* (Longicorn beetles) are attracted. I have collected many varieties on the dead branches, among them being the large *Batocera boisduvalli* (Hope).

There must be a large number of insects and birds to which the above trees are useful, but all those listed above I have noted on the trees in the Barron Gorge.

CLUB FIELD DAYS

The scene of the August field day was Walsh's Pyramid and the Mulgrave River. On this occasion a choice of destinations was arranged to cater for both the athletic and the not so agile members. The Pyramid of 3023 feet is a strenuous but by no means

difficult climb. Being lightly timbered the surrounding country can be viewed well from all parts of the mountain. The chequer-board design of cane farms round its base makes a pleasing picture. Features of interest on the mountain were the discovery

of several aboriginal artifacts, the profuse flowering of *Syllecarpia procera* which appeared highly attractive to butterflies, and the numerous flowering plants of *Dendrobium fusi-forme* and *Cymbidium lridifolium*. *Callistemon Polandi* was noted in flower at the summit. The Composite, *Boyra septentrionalis*, that resembles a moss from a short distance made very attractive patches of colour on the rock faces.

The party that explored the river met with some success in botanising and secured a number of interesting specimens. *Callistemon viminalis*, the common species in North Queensland, was in full bloom along the river.

In September advantage was taken of the low water spring tides to explore the reefs of Double Island. Features that differentiate these reefs from others in the neighbourhood of Cairns are the presence of many algae in large numbers, some of which have

not been noted elsewhere, and the large patches of *Alcyonarian* corals. A specimen of *Tridachna gigas*, the giant clam, that has been known to the writer for ten years past attracted much interest. *Ostraea* spp. found on the inner edge of the reef proved of much interest to many members.

Lower Stoney Creek attracted a good attendance of members and friends in October. The party proceeded by rail motor to Stoney Creek railway station then walked down the Stoney Creek Gorge to its junction with the Barron River. Several rain showers made the travelling rather unpleasant at times, but failed to dampen the ardour of participants. Spangled Drongos and Rainbow Lorikeets were plentiful and noisy. Several large specimens of *Rhodomirtus macrocarpa* in full fruit were noted, one being at least twenty feet high. The day appeared to be a poor one for beetle collecting, but a number of Carabidae were taken.

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at School of Arts, Shields Street, Cairns.

usually on second Tuesday in each month, at 8 p.m.

MEETING, TUESDAY, 9th DECEMBER, 1947.

FIELD EXCURSIONS

14th September, 1947: Launch trip to Double Island. Attendance 40.

26th October: Stoney Creek Falls to Barron River.

CHRISTMAS GATHERING, 22nd December, at Barron Waters.

MEETINGS

9th September: ANNUAL GENERAL MEETING. Officers elected: Pres., S. E. Stephens; Vice-pres., Mrs. T. Webb; Capt. Sullivan; Patron, Dr. H. Flecker; Hon. Sec., J. Wyer; Hon. Treas., J. Gorton; members of Committee, G. B. Stephens, R. B. Williams, A. Read, F. R. Morris; Hon. Auditor, J. Gray.

14th October: Exhibition and Display of Longicorn Beetles by G. A. Brooks.

11th November: Exhibition of Timber and Timber Products by H. Whibley.

NEW MEMBERS ELECTED

9th September: G. E. Binsted, Australian Museum, Sydney; R. C. Veivers, Myola; D. Veivers, 10 Digger Street, Cairns; Nurse G. D. Evans, General Hospital, Cairns; Nurse I. Power, General Hospital, Cairns.

14th October: Junior member, Hugh Read; Hon. Life Member, David Whibley, Stirling West, S. Australia.

11th November: Dr. G. D. Finckh, General Hospital, Cairns; Dr. R. M. Withers, General Hospital, Cairns.



The Journal and Magazine of the North Queensland Naturalists' Club.

Vol. XV

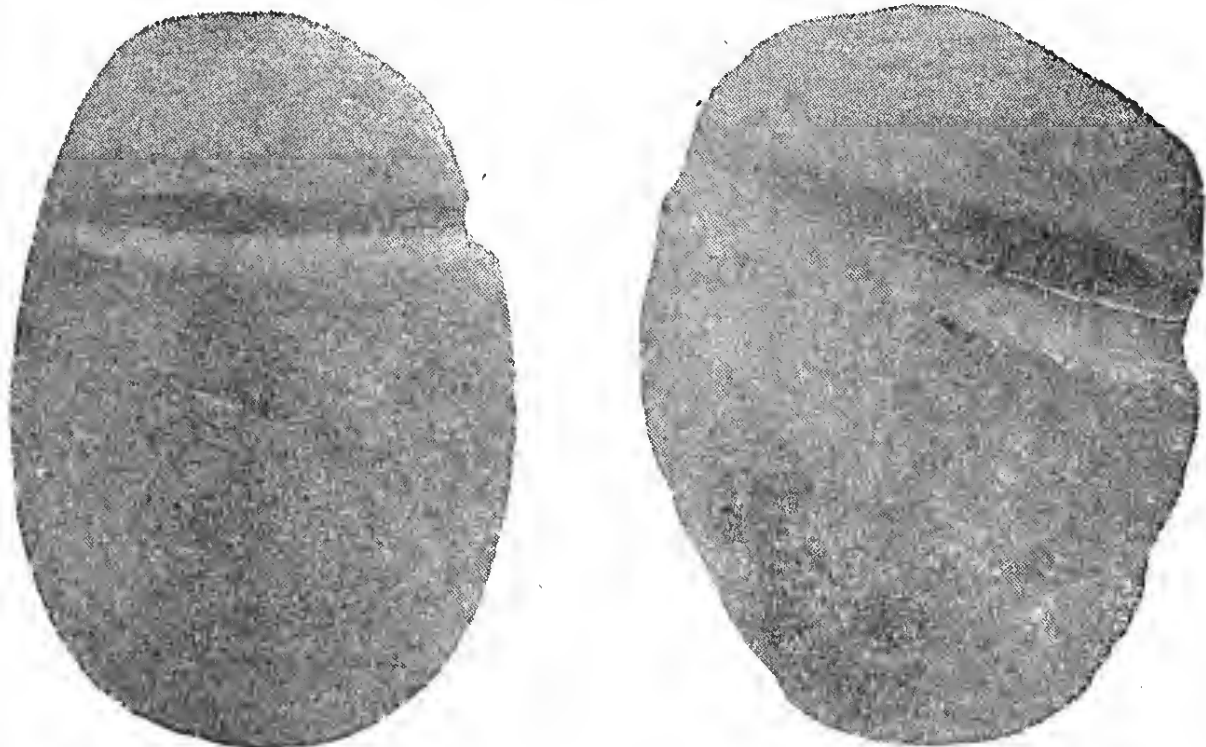
CAIRNS, 1st MARCH 1948

No. 86

ABORIGINAL GROOVED AXE-HEADS

KEITH KENNEDY

President, Townsville and District Naturalists' Club. Past President, Anthropological Society of N.S.W.



Stone on the left from Cooktown district; that on the right from Townsville Common.

Recently a member of the Townsville and District Naturalists' Club presented me with a grooved form of aboriginal axe-head. It had been given to him by a lady, who supplied the information that it was brought from Cooktown some years ago. A few weeks later another member of the Club gave me a smaller specimen which he found in a shallow depression made by soil getters on the Townsville Common.

Normally the axe-heads made by the Australian aborigines are not grooved, and are wedged into the haft. It is only in certain localities that the grooved kind is found. The reason of the groove is to prevent the head slipping from the hafting, which is formed by bending a strip of split

pliable wood around the groove, and binding the ends together for the handle.

Roth (1) mentions grooved axe-heads occurring in North Queensland but does not report them in his *Ethnological Studies of North Western Queensland*. In New South Wales they are found on the watersheds of the Murray and Darling Rivers, and in Victoria from the western part of that State. A variety with two grooves was collected near Avoca, Victoria, (2) and another from Wileannia, New South Wales, (3) but this double grooved variety is very rare. The specimen from Cooktown weighs 3 lbs. 3 ozs. Its greatest length is 17 cm. and greatest breadth 12.2 cm. The material it is made of is a greyish igneous rock,

and the whole implement is patinated—a sure sign of age. On one face a flake, 8.4 cm. in length, has been broken off, but so long ago that the scar has also become patinated. The groove, averaging 14 mm. in width and 3 mm. in depth, is located 5.5 cm. from the butt. It almost encircles the head, cutting through the top, but not the lower side, and has been made by the “pecking” process. The cutting edge of the blade is evenly rounded and ground. Superficially this axe-head gives the impression of being made from a water-worn pebble, but a close scrutiny shows that, like the groove, it has been made also by the “pecking” process.

The Townsville specimen weighs 8 ozs., is 9.5 cm. in length, and 7.3 cm. in breadth. Its groove, 3.3 cm. from the butt end, averages 14 mm. in width and 3 mm. in depth, and completely, but obliquely, encircles the head. Like the Cooktown specimen it and its groove have both been made by pecking. One face has been partly broken away, but not enough to damage the ground edge. The stone is very dense and dark, with minute glistening particles, and is probably schistose in character.

Most of the axe-heads found in Australia were made by being first flaked into shape and then smoothed and polished by grinding (rubbing) on sandstone. Sometimes only the cutting edge was ground, and the rest of the implement left in the rough. Often, instead of shaping a stone, a water-worn pebble of suitable dimen-

sions was selected, and ground at one end to make a cutting edge. This grinding process is typical of the Neolithic culture, while flaking only was employed in the older Palaeolithic culture. In the latter process flakes were struck off a piece of siliceous stone and, both the flakes and the parent core having sharp edges, were ready for use, but only certain kinds of stone that would fracture cleanly were suitable for this process.

The pecking process, also Neolithic, requires a different technique to grinding and flaking. Any hard and tough stone can be used, and the shape desired is obtained by striking a numerous succession of short blows with a hammer-stone, causing the part struck to crumble away. By both this and the grinding process the form of the object required can be envisaged in advance, and is therefore under the control of the worker.

The grooved axe is not found on the Pacific Islands, but is distributed over most of North America, where it is also made by the pecking process. Its uneven distribution in Australia where it is often found side by side with the ungrooved form, its absence in the Pacific, and occurrence in North America, is one of the ethnological problems yet to be solved.

REFERENCES.

- (1) Roth; North Q'land Ethnography. Bull. 7. Brisbane 1914.
- (2) Worsnop; Pre-historic Arts of the Aborigines: p. 109. Adelaide 1907.
- (3) Thorpe; Eth. Notes: Rec. Aust. Mus. vol. XVIII: 6. Sydney.

THE NOMENCLATURE OF *CALANTHE VERATRIFOLIA* R.Br.

By the Rev. H. M. R. RUPP, Northbridge, N.S.W.

In the first volume of his “Orchidaceae,” published in 1905, the American orchidologist Oakes Ames rejected Robert Brown’s name for this species in favour of *C. furcata* Batem. In Vol. II, published three years later, he abandoned Bateman’s name, considering that the plant was identical with *Orchis triplicata* Willem. in Usteri Ann. Bot., vol. 6, St. 18 (1796), 52. Ames had previously expressed this opinion in the Philippine Journal of Science (Bot.) 2 (1907), 326. Thus the plant appears in “Orchidaceae,”

11,159, as *Calanthe triplicata* (Willem.) Ames. He gives a number of synonyms, among which is *C. veratrifolia* R. Br.

But in Merrill’s “Enumeration of Philippine Plants” (1925), Vol. I, p. 333, the author remarks: “It has been deemed advisable to adopt the name *C. furcata* for the Philippine material, as there is no question as to its identity. As pointed out by J. J. Smith in Merrill, Interp. Rumph. Herb. Amb. (1917), 170, the combination *C. triplicata* Ames is untenable, as

Orchis triplicata Willem., the name-bringing synonym, is not conspecific. While *C. veratrifolia* R.Br., as to plant and figure described, is probably conspecific with *C. furcata* Batem., it is open to grave doubt, as pointed out by Smith, l.c., whether *Limodorum veratrifolium* Willd. is the same as the plant that Brown figured and described. Should *Limodorum veratrifolium* Willd. be *C. sylvatica* Lindl., as seems probable, the combination *C. veratrifolia* R.Br. would apply to that species."

The question of the correct nomenclature of the plant which we in Australia know as *Calanthe veratrifolia* R.Br., is thus seen to be a complicated and difficult one. I do not know of any later publication on the subject since Merrill's cited above. In Bot. Reg. VII (1821), a note from MSS of R.Br. is published in connection with a figure of *Lissochilus*,

in which Brown establishes the genus *Calanthe*, "consisting of *Limodorum veratrifolium* and, judging from Kaempfer's figure, *L. striatum* also." In Bot. Reg. IX (1823), two plates (720 A and B) are published of *Calanthe veratrifolia* R.Br., which is identified with Willdenow's *Limodorum veratrifolium*. These two fine colour plates unquestionably, in my opinion, represent our Australian plant.

Whether our plant is identical with the Philippine species is another matter. At all events, in view of the uncertainties involved in the question of this nomenclature, I think we shall be well advised in Australia to retain for our plant the long-established and familiar name *C. veratrifolia* R.Br. until it is clearly demonstrated that the rule of priority requires its suppression in favour of some other.

BIRDS OF TOWNSVILLE AND DISTRICT

By H. E. TARR, Melbourne.

In compiling this list of the birds of Townsville and District, I am indebted to Mr. Speneer Hopkins, of Townsville, from whose personal direction I was able to make many observations. Three very interesting observations I made this time up north; the main item being a pair of Little Crows, *Corvus bennetti* at Edge Hill (in the Cairns District) on 30/9/47. The next item was two Greater Frigate Birds, *Fregata minor*. The next was the appearance of flocks of the Torres Strait Pigeon, *Myristicivora spilorrhoa* on the Town Common at Townsville, this being the most southerly record I have made in 15 visits north until three more were noted at Ayr, 16/10/47. A large black bird, which I identified on 4/10/47 as the Red Tailed Black Cockatoo, *Calyptrorhynchus banksi* flew from the direction of Magnetic Island and passed over Cape Pellaranda and then over the Town Common. As it passed

within 100 yards of me, I am absolutely certain of its identity, but it surely must have lost its way, as like the Little Crow, it is not a seaside dweller. This is not the first seaside record of *C. banksi* as I had daily observations of it flying over Darwin in 1941-2.

In the Town Common at Townsville lies one of the most prolific bird sanctuaries in Australia in respect to both quality and quantity.

The Common Myna, *Acridotheres tristis* is the only introduced bird observed.

The localities from which the following birds have been noted may be listed into five district groups, which are indicated as follows: A. North Ward and Belgian Gardens; B., Armstrong Paddock and Oonoonba Railway; C., Town Common; D., Bayside and adjacent mangrove inlets; E., Magnetic Island; X., Listed at earlier visits.

1. Brown Quail, *Synoisus australis*. X. C. 1944.
2. Red Chested Quail, *Turnix pyrrhothorax*. X. B. 1943.
3. Torres Strait Pigeon. *Myristicivora spilorrhoa*. C. Very common, observed in flocks up to 20. My most southern record is Ayr, 16/10/47.
4. Peaceful Dove, *Geopelia placida*. Common, breeding in all districts.

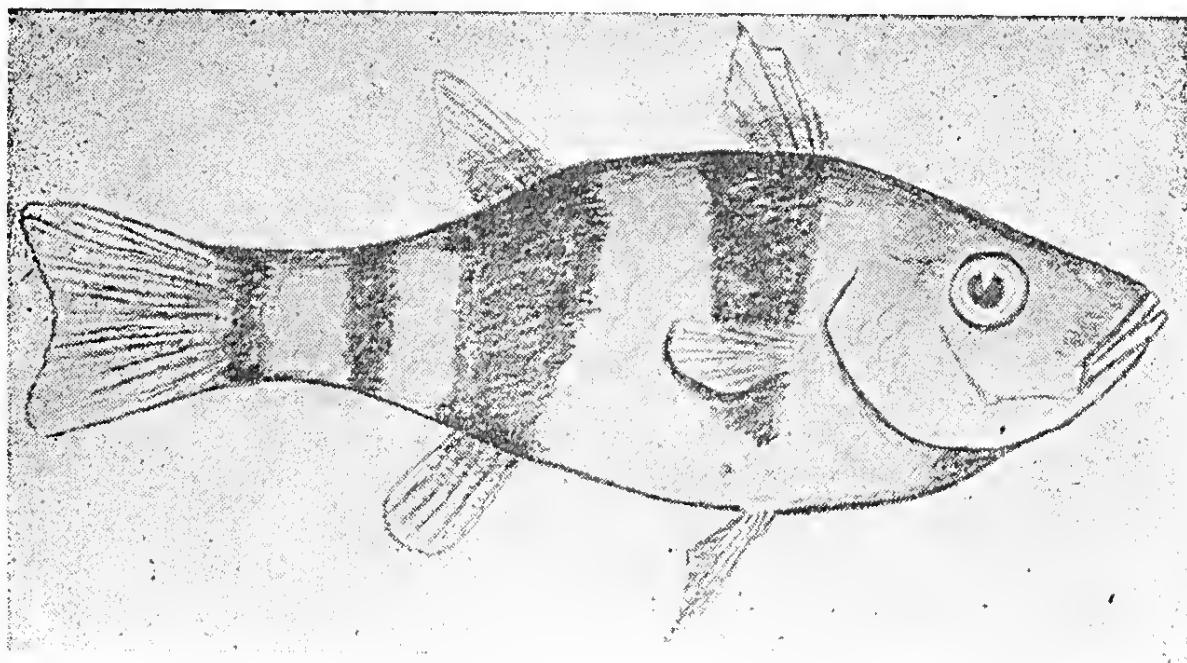
5. Common Bronzewing, *Phaps chalcoptera*. X. B. 1929.
6. Crested Pigeon, *Ocyphaps lophotes*. C. Did not expect to find this here.
7. Dusky Moorhen, *Gallinula tenebrosa*. C. One bird only observed.
8. Eastern Swampheh, *Porphyrio melanotus*. C. In small numbers.
9. Little Grebe, *Podiceps ruficollis*, C. Occasionally.
10. Black Cormorant, *Phalacrocorax carbo*. C. and D. Common.
11. Little Black Cormorant, *Phalacrocorax ater*. C. Occasionally.
12. Pied Cormorant, *Phalacrocorax varius*. B., C. and D. Common.
13. Little Pied Cormorant, *Microcarbo melanoleucus*, C. Occasionally.
14. Brown Gannet, *Sula leucogaster*, D. Only once recorded.
15. Australian Pelican, *Pelecanus conspicillatus*, C. Common.
16. Whiskered Tern, *Chlidonias leucopareia*, C. Occasionally.
17. Gull-billed Tern, *Gelochelidon nilotica*, B. and C. Occasionally.
18. Caspian Tern, *Hydroprogne caspia*, D. Common.
19. Crested Tern, *Sterna bergii*, D. Common.
20. Black-naped Tern, *Sterna sumatrana*, D. Occasional.
21. Bridled Tern, *Sterna anaetheta*, D. Common.
22. Silver Gull, *Larus novae-hollandiae*, D. and E. Common.
23. Sooty Oyster-catcher, *Haematopus unicolor*, E. One record only.
24. Masked Plover, *Lobibyx miles*, B. and C. Very common.
25. Red-capped Dotterel, *Charadrius ruficapillus*, D. Observed nesting.
26. Black-fronted Dotterel, *Charadrius melanops*, B. Odd pairs noted.
27. White-headed Stilt, *Himantopus leucocephalus*, C. One large flock noted.
28. Whimbrel, *Numenius phaeopus*, D. E. Common shore bird.

(To be continued.)

FRESH WATER FISHES OF THE BARRON RIVER.

BRUCE SHIPWAY, Perth, W.A.

(Concluded)



KURANDOPOGON BLANCHARDI Whitley

Kurandapogon blanchardi Whitley

Found in the lower reaches of the Barron and Mulgrave Rivers. The body of this perchlet is coloured light green with broad vertical bands of yellowish green. The spinous and soft dorsals are about equal in size and all the fins are carried well extended. It

lives amongst dense patches of aquatic plants such as *Elodea* and is a mid-water swimming fish. Information regarding its breeding habits is desired. Owing to its small size, one and a half inches, and its hardiness it should make a good aquarium fish.

Family ELEOTRIDAE.

Carassiops compressus (Ogilby)

Found in the upper and lower reaches of the Barron River. This little gudgeon is noted for its hardiness. It can live in water too foul or stagnant for most others. Its rather drab pale green colour is only relieved by a dark edge on its soft dorsal fin. It is sluggish in habits and prefers to more or less "walk" along the bottom of the streams and water holes in search of food instead of actively swimming. It is often found in dense masses of *Elodea* where it will remain hidden for lengthy periods. It is a valuable destroyer of mosquito larvae but owing to its small appetite cannot cope with a badly mosquito-ridden pool unless it is present in large numbers. Information is desired regarding the breeding habits of this fish but it is probable it may act in the same manner as the *Mogurnda mogurnda adspersus*. Length 4 inches.

Family CYPRINODONTIDAE.

imported from the Southern States of U.S.A. about 1910, belongs to the viviparous group and drops from 10 to 100 young every four to five weeks. The young reach maturity in about 10 weeks and are able to fend for themselves a few hours after birth. The fish is remarkable mainly in the differences between sexes. The female is about 2½ inches long and usually has a black spot on the body above the anal fin, known as the gravid spot, indicating the presence of the unborn young. The male when mature is about 1½ inches long and is of slimmer build. The anal fin of the male develops into an organ known as the gonopodium. The colour of both male and female is of a pale greenish grey with a faint iridescent blue. The dorsal fin and tail are marked with very small dark spots. Occasionally a fish may be seen with larger black markings, sometimes nearly covering the entire fish. It is a cannibalistic fish, eating its young and that of other fish. It can live in fresh, salt or brackish water. The writer's views on the subject of the introduction of these already stocked with mosquito-eating fish are at the authorities responsible release.

Correction:—Vol. XV, no. 84, page 6, below second illustration delete the name *Kuhlia rupestris* (Lacepede) and substitute *Therapon unicolor*.

E DINGO

Proceedings of the Royal Zoological Society of New South Wales for the year 1946-47, on p. 35, Tom Iredale has shown that according to the usual rules of priority, the name, *Canis antareticus* Kerr, 1792 must be applied

As, however, the dingo is now generally regarded as a variety of the domestic dog, *Canis familiaris* L., the full name should be *Canis familiaris antareticus* (Kerr), combination nova.

NEST BUILDING OF *CYRTOSTOMUS FRENATUS*

S. E. STEPHENS, President, N.Q. Naturalists' Club.

The yellow-breasted Sunbird, *Cyrtostomus frenatus*, is a very sociable bird, or perhaps rather one should say has a trusting nature insofar as human beings are concerned. It delights in flitting round a garden extracting

nectar from the flowers and catching stray insects. Its nest is frequently built close to human habitation, and favoured sites are under the protection of eaves or on the verandah of a house.

The nest building habits are interesting. Breeding occurs during the summer months—particularly in December and January at Cairns. The breeding pair spend several days inspecting sites. The selection of the site for the nest appears to be a joint undertaking. Some hanging object from which the nest can be suspended is usually sought, and possible spots are carefully inspected from all angles. Both birds repeatedly fly at and hang together on sites under consideration, chattering continuously. The object in this manoeuvre appears to be to test the swing, which would be an important consideration in a pendant nest, and would have some influence on its design. Over a period of several days a site that appears to find favour will be re-inspected between searches for other likely spots. A piece of hanging string or frayed rope is a very frequent choice as it offers a good base for weaving upon. The case of one of the larger species of Bag Moth hanging on a house wall was observed to have been used by one pair during the 1944-1945 season. Occasionally work will be commenced on nest building and the site abandoned after several days work, a possible explanation being that some unfavourable factor, such as too great exposure to wind, has been discovered.

Provided no unforeseen hitches occur, building progresses along the following lines:—a large quantity of spider web is brought in and stuck to the foundation over a length of several inches. Pieces of fine dry grass, and threads of bark fibre are worked into and suspended on the webs. Further lengths of spider web and grass are added until the structure is about eighteen inches to two feet long. An area below the centre of the structure is built up in thickness with closely laid pieces of fibre and grass cemented with the spider web. When a sufficient body of material has been accumulated the bird clings to the outside and, with her long bill, pushes the fibres apart to form a hollow with a side entrance. The opening of the centre forms thin patches in the outer walls and these are filled with more fibre. Gradually the hollow is in-

creased in size until it becomes large enough for the bird to squeeze in. She then enters and shuffles violently until the inner walls have spread sufficiently to give ample room. The hollow is next lined with fine fibre composed of dry grass seed stems, pieces of palm fibre, bark fibre, etc. At this stage a projecting hood is built over the nest opening, the fibre lining being extended through the top of the opening to construct it. Concurrently with the internal lining the outer structure is added to and decorated with dead leaves, pieces of paper bark from *Melaleuca* trees and liberal sprinklings of borer excreta from *Acacia* trees. The tail which extends below the nesting hollow is added to and decorated plentifully with the same materials held together with spider web. During the decorating process the hood is woven to the outer structure and the ragged ends bound in to make a neat finish and a secure porch roof. The nest is completed with a final lining of downy feathers and soft down from seed pods of *Asclepias* spp.

Practically all the building work is carried out by the female. The male spends his time in the near vicinity of the female entertaining and encouraging her with song. He makes frequent inspections of the work in company with her, at which times they indulge in animated chattering.

The speed with which the work progresses is indicated by the following time table:—During the week ended 10th January, 1948, inspections were made for a nesting site. The site was selected and building commenced on the 11th; the 12th was wet and very little work was done; on the 15th the centre hollow was opened out; and on the 17th lining of the nest with feathers and *Asclepias* down was completed.

Dimensions of a typical nest of the Sunbird are:—Overall length 28 inches; from suspension to top of nest bulb 14 inches; nest bulb 6 inches long by 2½ inches side to side and 2½ inches front to back measurement; tail 8 inches. The nest entrance is 1½ inches high by 1¼ inches wide.

CAIRNS WAR MEMORIAL

Residents of Cairns decided at a public meeting held some time ago that the Memorial should be in the form of a museum. A committee composed of representatives of the local authorities and the prominent public bodies of Cairns is now proceeding with the raising of funds. The Cairns Harbour Board has very generously made available two buildings of the H.M.A.S. Kuranda barracks as temporary Memorial premises so that the Honour Roll may be displayed as soon as it is completed, and to house and display the museum specimens as they are collected. In addition to the Honour Roll which will contain the names of all service men and women it is proposed to provide for memorial plaques to any whose relatives so wish to honour them. The Museum will be a general one to embrace war relics, historical pieces, ethnological, mineral, and the various natural history sections.

As one of the public bodies of Cairns, the North Queensland Naturalists' Club is associated with the movement. The extensive ethnological and natural history collections in the possession of the Club have been transferred to the War Memorial and will form the basis of those particular sections. The herbarium of the Club, which contains many fine sheets from other States as well as a large collection of local flora, will be also incorporated.

Whilst the Memorial will honour the service men and women of the Cairns military district it is anticipated that the museum side of the Memorial will serve as a repository for much valuable material and many interesting specimens from the whole of North Queensland. In this respect its importance extends far beyond the immediate Cairns district and even beyond North Queensland, for it is hoped that the institution will become a centre of scientific knowledge concerning North Queensland. To permit the accomplishment of this aim it is necessary that the donors of all material and specimens for the museum should furnish all particulars available regarding their donations. In regard to the ethnological, mineral, and natural history sections, which are the responsibility of the North Queensland Naturalists' Club, notes as to the place and date of finding, details regarding the actual location of the specimen, its relation to surrounding objects, and any other relevant facts, and finally the finder's name, should be forwarded with each specimen.

Specimens with accompanying notes may be sent to the president of the Club (Mr. S. E. Stephens, C/- Dept. of Agriculture, Cairns) or its secretary (Mr. J. Wyer, C/- Harbour Board, Cairns). Botanical specimens may be addressed to Dr. H. Flecker, Abbott St., Cairns.

MAGNETIC ISLAND

Field Day of the Townsville and District Naturalists' Club,
held 16th November, 1947.

By KEITH KENNEDY

The November Field Day of the Townsville and District Naturalists' Club was an excursion to Nellie Bay, Magnetic Island.

Our party landed at Picnic Bay and walked the rocky track to Nellie Bay, which lies in the next valley. Here we made our headquarters for the day.

The bulk of Magnetic Island is covered with "dry forest" and on the Nellie Bay side only at an elevation half-way up Mt. Cook, the highest peak on the island, does one encounter vegetation which requires moist conditions. Mt. Cook reaches a height of 1628 feet and from Nellie Bay can be seen on

its side a patch of darker forest sprinkled with numerous light lines denoting the stems of palms. Some of us decided to make this palm forest our objective, so taking a track which leads into the valley, we walked on until the valley gradually got narrow and ended near a small farm. Cutting across the farm we entered a dry water course and commenced the climb. A few wallabies hopped away and we saw several monitors (goannas). On the bank of the watercourse were seen a number of small holes in the ground which aroused some speculation as to their cause. The mystery was solved by Mr. F. Breuer who observed a large

goanna busily digging away evidently searching for grubs or some other form of food. In places grew a few stinging trees (*Laportea moroides*) called by the blacks "gimpie"—some of these we destroyed. Then we saw some Torres Strait pigeons, a bird often found where palms grow. The slope grew steeper and at last we reached the palm forest. The palms were a species of *Archontophoenix* and around their bases grew many ferns, those observed being *Nephrolepis exaltata*, *Drynaria sparsisora*, *Dryopteris nymphaelis*, *Davallia denticulata*, *Pteris tremula*, *Adiantum hispidulum* and *A. aethiopicum*.

FIELD EXCURSION

13th January, 1948: Miller's Beach. Attendance 26.

Perfect weather favoured the excursion, which was made by twenty-four adult and several junior members. The autumn-tinted foliage of the Milky Mangrove, *Excoecaria Agallocha*, attracted the attention to a small creek nearby, from which several varieties of water beetles were collected. A number of small fish were noted in the isolated pools in the creek-bed, for the creek had already stopped flowing, although the rain had ceased only a few days before. Insect life was scarce along the banks of the creek, most of it having been flooded out by storm-water.

The male and female flowers of the Milky Mangrove are borne by separate trees, and develop while the trees shed their leaves. The sap of this tree is extremely irritating to the skin and eyes, and it should therefore be handled with caution.

A number of the beautiful Jewel Beetles were collected from the foliage of the young Wattles near the road, and it was there that a small caterpillar was observed carrying about twenty cocoons of some parasitic insect (probably a wasp) in the fur of its back.

Following afternoon tea on the beach at 3.30, the day's collection of specimens was displayed and discussed, and a quick run home through the canefields in the glow of the late afternoon concluded a very pleasant day.—A. P. Watkins.

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at School of Arts, Shields Street, Cairns.

usually on second Tuesday in each month, at 8 p.m.

NEXT MEETING, TUESDAY, 9th MARCH, 1948.

MEETINGS

9th December, 1947: Lecture by H. Pottinger, Member Queensland Entomological Society. "Collecting in Cape York Peninsula."

12th January, 1948: Paper by K. Kennedy, President Townsville and District Naturalists' Club. "Aboriginal Grooved Axe-heads."

10th February: Members' Night. General discussion on exhibits.

NEW MEMBERS ELECTED

9th December: Mrs. E. M. Wham, Severin St., Cairns; Master G. W.

Wham, Severin St., Cairns (Junior); Miss A. V. Strelnikoff, 154 Sheridan St., Cairns; Mr. N. Gore, Wasua, Fly River, Papua.

12th January: Mr. C. W. Elliott, Atherton; Mr. T. W. Elliott, Innisfail; Mr. C. J. Baker, 229 Abbott St., Cairns.

10th February: Mr. and Mrs. J. Barkus, Walsh St., Edge Hill; Mr. and Mrs. J. Killoran, Friend St., Edge Hill; Miss V. Beaman, Stratford (Junior).

The North Queensland Naturalist

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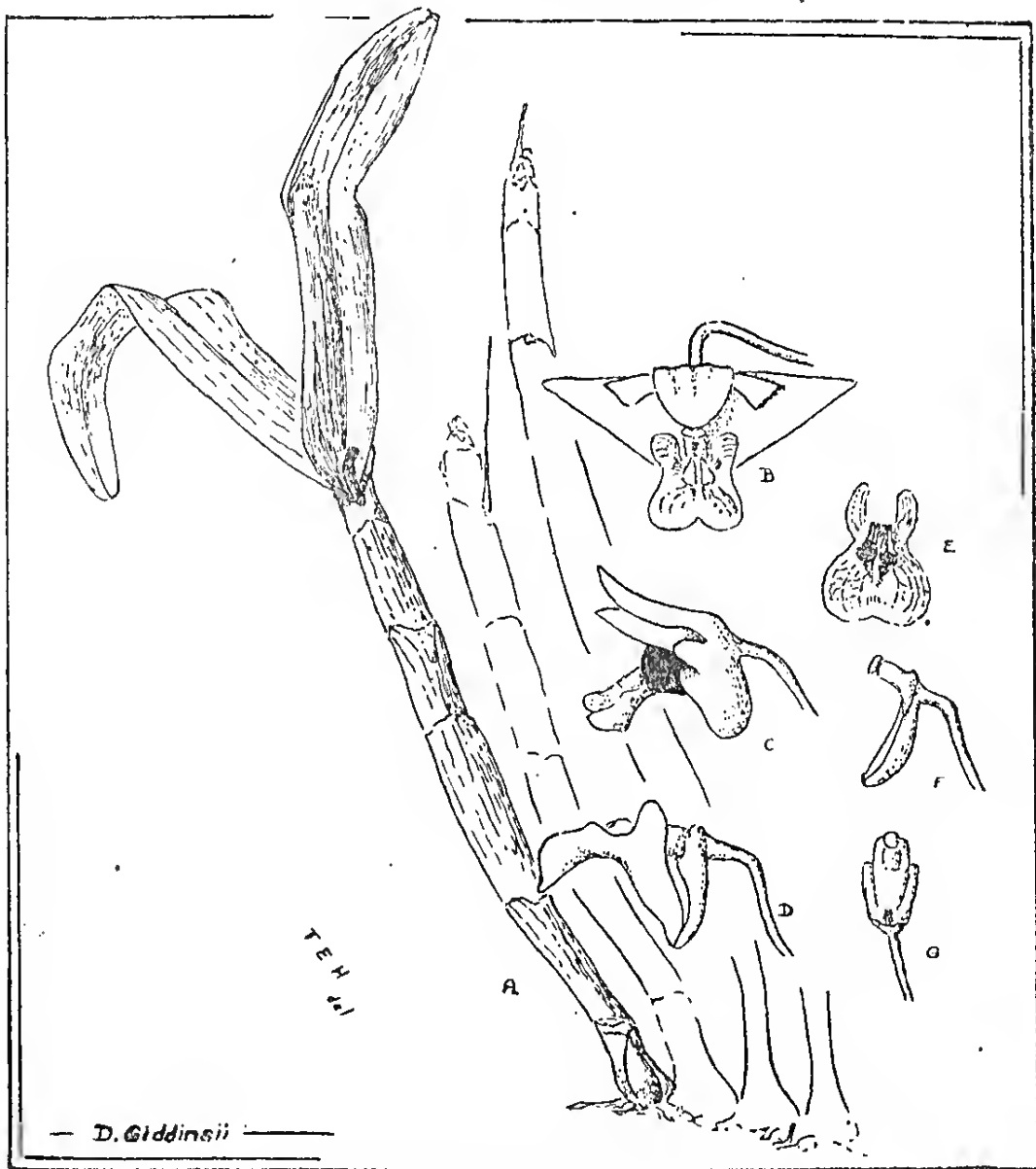
CAIRNS, 1st JUNE 1948

No. 87

FAMILY ORCHIDACEAE

A NEW SPECIES FROM NORTH QUEENSLAND.

Trevor E. Hunt, Ipswich.



DENDROBIUM GIDDINSII Hunt.

- A. Plant approx. two-thirds natural size.
- B. Flower from front.
- C. Flower from side.
- D. Labellum and column.

- E. Labellum from front.
- F. Column from side.
- G. Column from front.
- (B to G enlarged).

Dendrobium Giddinsii sp. nov.
Pseudobulbi fusiformes, circa 10 cm.
alti. Folia 2-3 late-linear, emarginata,
circa 8 cm. longa. Racemi 2-3. Flores
2-5, circa 2.5 cm. lati, pedicelli 1.5 cm.

longi. Sepala et petala flavido-virida.
Sepalum dorsale lanceolatum, acutum;
sepala lateralibus triangularia; calcar
latum, obtusum; petala late-linear
acuta. Labellum sepalis longius, trilo-

batum, recurvatum; lobi laterales, ampli, erecti, obtusi, lineis purpureis; lobus intermedius amplius, obcordatus, viridus, lineis purpureis; lamina lineis duabus albis vel purpureis erectis et circulis duobus ad frontem. Columna 4 mm. alta, alba, anthera flava; pes columnae 6 mm. longus.

Pseudobulbs crowded, fusiform about 10 cm. high and 7 mm. in diameter, the younger ones covered with the whitish scarious remains of thin sheathing bracts. Leaves two or three from the uppermost nodes, broad-linear, unequally bidentate, about 8 cm. long and 1 cm. wide, keeled with several prominent ribs on each side of the mid-rib. Racemes from the upper nodes, about 3 cm. long, few-flowered. Flowers about 2.5 cm. across on pedicels 1.5 cm. long. Sepals and petals a uniform yellowish green, thick in texture. Dorsal sepal lanceolate, acute, projecting forward over the column and more or less parallel to the labellum; lateral sepals triangular, spreading; spur broad, obtuse; petals broad-linear, acute. Labellum somewhat longer than the other segments, 3-lobed, recurved; lateral lobes large, erect, obtuse, pale green heavily marked with dull purple; mid-lobe large, obcordate, green heavily lined with dull purple; plate with two erect, white or purplish lines of calli dividing and sub-dividing towards the mid-lobe where they terminate in two broad clusters. Column

about 4 mm. high, white, with several processes beside and behind the anther; anther yellow with a green tip; stigma prominent; column foot about 6 mm. long stained with purple. —Hartley Creek, North Queensland. R. Giddins, April, 1947.

Two plants of this species were received from Mr. J. H. Wilkie of Babinda, in May, 1947, and placed in the author's glass house where they continued to grow well. One bloomed early in November and the other is now in bud in December. Towards the end of October Mr. Wilkie forwarded another plant in bloom. The last constitutes the type specimen.

Its habit, the thick texture of its floral segments, the lasting quality of its flowers, the shape of its labellum, and its colouration suggest an affinity with the beautiful New Guinea species *D. atrovioleaceum*.

The flowers evidently last a considerable time as those on the author's plant showed no sign of withering almost a month after opening when they were removed for pressing. In them the purple colouration was very dull, a greyish purple, whereas in those received in October the colour was not only clear and rich, but there was more of it.

This attractive species has been named in honour of its discoverer. Mr. R. Giddins, an orchid enthusiast of North Queensland.

SOME NORTH QUEENSLAND COLEOPTERA AND THEIR FOOD PLANTS

J. G. BROOKS, B.D.Sc., F.R.E.S.,

This paper is based on my own collecting experience in the Cairns, Kuranda, and Mareeba districts during the past two seasons. Most of the specimens listed belong to the popular families, due firstly to the fact that it is easier to obtain identifications for such families; and secondly, the paper should thus prove of interest to a greater number of collectors, and may act as a guide to any who may visit North Queensland. Not all specimens taken have been listed due to difficulties in obtaining identifications, and even specimens in the popular

families are still on the "waiting list" for further attention as literature becomes available. Many of the species listed, particularly Buprestidae and Cetoninae, have been taken only in small numbers; due principally to the height of the trees which they frequent.

I am indebted to the following for their assistance with the identifications:—Messrs. Keith C. McKeown, F.R.Z.S., J. W. T. Armstrong, H. Hacker, F.R.E.S., W. du Boulay, H. Jarvis, J. H. Buzacott, M.Sc., and the late H. J. Carter, B.A., F.R.E.S.,—

Coleoptera; and Mr. S. E. Stephens—Botanical specimens. Where standard trade vernacular names for trees have been proposed by the Council for Scientific and Industrial Research these names are shown in brackets following the locally recognised name if the vernaculars are at variance.

BLOODWOOD. (RED BLOODWOOD).
Eucalyptus gummifera (Gaertn.) Hoehr.

Family BUPRESTIDAE.

- Calodema plebeja* Jord.
- C. regalis* L.&G.
- Metaxymorpha gloriosa* Blkb.
- M. hauseri* Thery.
- Curis viridicyanea* Fairm.
- Themognatha carpentariae* Blkb.
- T. regia* Blkb.
- Castiarina alternata* Lunh.
- C. biguttata* Mael.
- Castiarina horni* Kerr.
- C. maculiventris* Mael.
- C. neglecta* Cart.
- C. rollei* Kerr.
- C. venusta* Cart.

Family SCARABAEIDAE.

- Lomaptera cinnamomea* Raffr.
- L. duboulayi* Thoms.
- Eupoecilia australis* Don.
- Lyraphora velutina* Mael.
- Ablacopus ater* Schock.
- A. trapezifer* Thoms.
- A. taeniatus* Schoek.
- Triebaulax trichopyga* Thoms.
- T. phillipsi* Scheib., var. *macleayi* Kraatz.
- Polystigma octopunctata* Burm.
- P. punctata* Don.
- Cacachroa decorticata* Mael.
- Schizorrhina atropunctata* Kirby, var. *immaculata* Lea.
- Glycyphana brunnipes* Kirby.
- Pecceopharis emilia* White.

Family CERAMBYCIDAE.

- Stenocentrus ostricilla* Newm.
- Syllitus grammicus* Newm.
- Demomysis filum* Pasc.
- Chlorophorus curtisi* L. & G.
- Aridacus heros* Pasc.

Family DERMESTIDAE.

- Anthrenocerus signatus* Armst.

Family CLERIDAE.

- Phlogistus corallipes* Chev.
- P. foveicollis* Mael.
- Tarsostenodes guttulus* White.
- Eleale intricata* Kl.

E. lepida Pasc.

E. viridis Guer.

Phlogistomorpha sculptus Mael.

All these species are taken from the blossom, which appears between January and March.

NARROW-LEAVED IRONBARK. Eucalyptus racemosa Cav.

Family BUPRESTIDAE.

- Themognatha regia* Blkb.
- Castiarina biguttata* Mael.

Family SCARABAEIDAE.

- Eupoecilia australis* Don.
- Polystigma punctata* Don.
- Cacachroa decorticata* Mael.
- Glycyphana brunnipes* Kirby.

Family CERAMBYCIDAE.

- Sisyrium apicale* Cart.
- Stenocentrus ostricilla* Newm.
- Syllitus grammicus* Newm.
- Chlorophorus curtisi* L. & G.

All taken from blossom in January.

CADAGA. Eucalyptus Torrelliana F.M.

Family BUPRESTIDAE.

- Castiarina octosignata* Cart.
- C. rollei* Kerr.
- C. venusta* Cart.

Family CERAMBYCIDAE.

- Syllitus unistriatus* McKeown.

Taken from blossom, September and October.

RED MESSMATE. (RED MAHOGANY). Eucalyptus pellita F.M.

Family LUCANIDAE.

- Cacostomus squamosus* Newm.
- Neolamprima mandibularis* Mael.

These beetles are foliage eaters and are taken from the young shoots at the tops of small to medium trees. January to March.

CANDLENUT. Aleurites moluccana Willd.

Family CERAMBYCIDAE.

- Glenea picta* Voet., var. *finnschi* Kuntz.

The larvae of this beetle live in the trunks of the trees and the adults emerge about the end of December to feed on the leaves.

WEeping FIG. Ficus Benjamina L.

Family CERAMBYCIDAE.

- Olenecamptus bilobus* Fab.

This beetle was taken in October from the bark of a tree which was dying as a result of having been poisoned.

FIG. *Ficus ehretioides* F.M.

Family SCARABAEIDAE.

Lomaptera cinnamomea Raffr.

L. duboulayi Thoms.

L. yorkiana Jans.

Ischiopsopha pulchripes Thoms.

These beetles are taken from the ripe fruit in December and January after the River Cherry (*Eugenia Tierneyana*) has finished blossoming.

FIG. *Ficus infectoria* Roxb.

Family CERAMBYCIDAE.

Xylotrechus australis L. & G.

X. reginae Auriv.

Ancita crocogaster Boisd.

Disterna mastersi Pasc.

D. plumifera Pasc.

Pterolophia blackburni Auriv.

Prosopius intercalaris Pasc.

P. woodlarkianus Montr.

Platyomopsis morata Pasc.

Sybra incivilis Pasc.

Family ANTHRIBIDAE.

Phloeobius gigas Fabr.

The specimens taken from this tree were taken from some branches which had been cut from the tree several weeks previously. They were taken during the period April to June.

FIG. *Ficus magnifolia* F.M.

Family CERAMBYCIDAE.

Rosenbergia megaloccephala Poll.

These beetles feed on the bark of the young branches and finally chew through the branches.

MILKY PINE. (WHITE CHEESE-WOOD). *Alstonia scholaris* R. Br.

Family CERAMBYCIDAE.

Batocera boisduvali Hope, var. *frenchi* Poll.

The larvae of this beetle have been cut from the trees and bred.

(—). *Jacksonia thesioides* A. Cunn.

Family BUPRESTIDAE.

Neospades simplex Blkb.

Family CERAMBYCIDAE.

Purpuriceenus quadrinotatus White.

Microtragus bifasciatus Lea.

Prosopius oblitus Pasc.

The Buprestid is taken from the blossom and the Cerambycids from shrubs which had been severely scorched by a bush fire. January and February.

RIVER CHERRY. *Eugenia Tierneyana* F.M.

Family SCARABAEIDAE.

Momadoretus flavomaculatus Macl.

Lomaptera cinnamomea Raffr.

L. duboulayi Thoms.

L. yorkiana Jans.

Eupoecilia australis Don.

Polystigma punctata Don.

Glycyphans brunnipes Kby.

Family CURCULIONIDAE.

Balaninus mastersi Pasc.

Family DERMESTIDAE.

Anthrenocerus signatus Armst.

Taken from blossoms in December.

RIVER HIBISCUS. (COAST COTTON-WOOD). *Hibiscus tiliaceus* L.

Family SCARABAEIDAE.

Anoplognathus smaragdinus Ohaus. (Green, blue and red varieties).

Calloodes frenchi Blkb.

Lepidoderma albohirtum Waterh.

Family CURCULIONIDAE.

Putorhytes stanleyanus White.

All these beetles are foliage eaters and are usually taken in January after several inches of heavy rain have fallen.

RED HIBISCUS. *Hibiscus rhodopetalus* F.M.

Family BUPRESTIDAE.

Neospades cruciata Fab.

These beetles eat the petals of the flowers. Taken February and March.

(—). *Tephrosia astragaloides* R. Br.

Family BUPRESTIDAE.

Neospades viridis Kerr.

Cisseis cupripennis Guer.

Family CURCULIONIDAE.

Baryopadus calvus Fabr.

Apion terra-reginae Blkb.

Taken from the blossoms and branches of the shrub. January.

(—). *Evodia Elleryana* F.M.

Family SCARABAEIDAE.

Lomaptera cinnamomea Raffr.

L. duboulayi Thoms.

L. yorkiana Jans.

Dilochrosis balteata Voll.

The Lomaptera are taken from the blossom during January and February but the Dilochrosis do not appear until February and after the heavy rain.

FLANNEL WEED. *Triumfetta Bart-ramia* L.

Family BUPRESTIDAE.

Melobasis cyanipennis Boh.

Taken from the foliage in January and February.

BROAD-LEAVED TEA TREE. *Mela-leuca Cunninghamii* Schau.

Family CERAMBYCIDAE.

Platyomopsis obliqua Don.

Taken from the bark of living small trees, January.

LARGE-LEAVED WATTLE. *Acacia Mangium* Willd.

Family BUPRESTIDAE.

Cisseis fulgidicollis Macl.

C. regalis Thoms.

Family CERAMBYCIDAE.

Penthea pardalis Newm.

Taken from the trunks of small trees, January and February.

RED ASH. (RED ALMOND). *Alphi-tonia excelsa* Reiss.

Family BUPRESTIDAE.

Hypocisseis latipennis Macl.

Foliage eaters taken December to February.

GRASS TREE. *Xanthorrhoea minor* R. Br.

Family CERAMBYCIDAE.

Platyomopsis variolosus Pasc.

Family CURCULIONIDAE.

Trigonotarsus rugosus Boisd.

The Cerambycid attacks the flower stem and the Curculionid breeds in the stem of the tree. Taken in January.

(—). *Antigonon leptopus* Hook et Arn.

Family MELOIDAE.

Zonitis bizonata Macl.

Taken from the flowers, April and May.

SPEAR GRASS. *Heteropogon triticeus* Domin.

Family CERAMBYCIDAE.

Lychrosis afflictus Pasc.

Hathliodes grammicus Pasc.

H. quadrilineatus Hope.

Family CHRYSOMELIDAE.

Rhyparida didyma Fabr.

Taken February and March after the wet season.

CYCAD. *Cycas media* R. Br.

Family CERAMBYCIDAE.

Dihammus aestheticus Oll.

This beetle is of economic importance as it breeds in the trunks of the palms and finally destroys its host.

BIRDS OF TOWNSVILLE AND DISTRICT

(Continued)

By H. E. TARR, Melbourne.

29. Australian Snipe, *Gallinago hardwicki*, D. Common.
30. Lotus-bird, *Irediparra gallinacea*, C. Very elusive. Noted breeding.
31. Southern Stone-curlew, *Burhinus magnirostris*, C. and E. Common.
32. Australian Bustard, *Eupodotis australis*, B. One bird only noted.
33. Brolga, *Megalornis rubicundus*, B. and C. Observed nesting.
34. Glossy Ibis, *Plegadis falcinellus*, B. Only 2 birds noted 1947.
35. Australian White Ibis, *Threskiornis molucca*, B. and C. Common.
36. Straw-necked Ibis, *Threskiornis spinicollis*, B. and C. Very common.
37. Royal Spoonbill, *Platalea regia*, C. Many large flocks noted.
38. Yellow-billed Spoonbill, *Platalea flavipes*, C. One record only.
39. Jabiru, *Xenorhynchus asiaticus*, C. Occasionally.
40. Little Egret, *Egretta garzetta*, B. and C., Occasionally.

41. Plumed Egret, *Egretta intermedia*, B. and C. The common egret.
42. White Egret, *Egretta alba*, B. and C. Occasionally.
43. White-faced Heron, *Potephoxyx novae-hollandiae*, C. Occasionally.
44. Reef Heron, *Demigretta saera*, E. Grey phase observed breeding.
45. Nankeen Night Heron, *Nycticorax caledonius*, C. One bird noted in immature plumage.
46. Mangrove Heron, *Butorides striata*, D. Occasionally.
47. Pied Goose, *Anseranas semipalmata*, C. Enormous flocks 1947.
48. Maned Goose, *Chenonetta jubata*, C. Occasionally.
49. Plumed Tree-duck, *Dendrocygna cytoni*, C. Enormous flocks, 1947.
50. Whistling Tree-duck, *Dendrocygna arcuata*, C. X 1944.
51. White Quilled Pygmy-goose, *Nettapus coromandelianus*, C. X. 2 birds 1936.
52. Green Pygmy Goose, *Nettapus pulchellus*, B. and C.; X. 1929, 1936, 1944.
53. Black Swan, *Chenopsis atrata*, C. X. 1944.
54. White Headed Shelduck, *Tadorna radjah*, C. Two birds only, 1947.
55. Grey Duck, *Anas superciliosa*, B. and C. Very common.
56. Hardhead, *Nyroca australis*, C. Occasionally.
57. Swamp Harrier, *Circus approximans*, C. Occasionally.
58. Wedge-tailed Eagle, *Uroaetus audax*, A. and E. Occasionally.
59. White Breasted Sea-eagle, *Haliaeetus leucogaster*, D. Occasionally.
60. Red-backed Sea-eagle, *Haliastur indus*, D. and E. Common shore bird. B. nesting.
61. Whistling Eagle, *Haliastur sphenurus*. Common all districts.
62. Black Kite, *Milvus migrans*. Common everywhere.
63. Square-tailed Kite, *Lophoietinia isura*, B. and C. Occasional visitor.
64. Little Falcon, *Falco longipennis*, B. and D. Occasional visitor.
65. Peregrine Falcon, *Falco peregrinus*, B. One record only.
66. Brown Hawk, *Falco berigora*, C. Occasional record.
67. Nankeen Kestrel, *Falco cenchroides*, A. Two records only.
68. Osprey, *Pandion haliaetus*, E. Always in attendance.
69. Rainbow Lorikeet, *Trichoglossus moluccanus*. Common everywhere.
70. Red-tailed Black Cockatoo, *Calyptrorhynchus banksi*, C. One record only.
71. White Cockatoo, *Kakatoe galerita*, C. Common in flocks.
72. Cloncurry Parrot, *Barnardius macgillivrayi*, B. Twice recorded.
73. Tawny Frogmouth, *Podargus strigoides*, A. One record.
74. Eastern Broad-billed Roller, *Eurystomus orientalis*, A., B., C. and E. Common.
75. Laughing Kookaburra, *Dacelo gigas*, B. and C. Noted occasionally.
76. Blue Winged Kookaburra, *Dacelo leachi*, A., B., C. and E. The common kookaburra.
77. Forest Kingfisher, *Halcyon macleayi*, A., B. and C. Very common.
78. Sacred Kingfisher, *Halcyon sanctus*, C. and E. Occasional record.
79. Rainbow-bird, *Merops ornatus*, A., B., C. and E. Very common.
80. Horsfield Bronze Cuckoo, *Chalcites basalis*, C. Constantly calling.
81. Golden Bronze Cuckoo, *Lamprocoecyx plagosus*, C. Occasional record.
82. Rufous-breasted Bronze Cuckoo, *Lamprocoecyx russatus*, C. One definite record.
83. Koel, *Eudynamys orientalis*, A. and C. Common (many more males).
84. Pheasant-coucal, *Centropus phasianinus*, C. Constantly booming.
85. Welcome Swallow, *Hirundo neoxena*, A. and E. Common bird breeding.
86. Australian Tree Martin, *Hylochelidon nigricans*, B. and C. Occasionally.
87. Fairy Martin, *Hylochelidon ariel*, C. Common.
88. Leaden Flycatcher, *Myiagra rubecula*, C. Occasionally.
89. Willie Wagtail, *Rhiphidura leucophrys*, B. and C. Common.
90. Rufous Whistler, *Pachycephala rufiventris*, C. Common.
91. Magpie Lark, *Grallina cyanoleuca*. Common all places.
92. Black-faced Cuckoo-shrike, *Coracina novae-hollandiae*, B. and C. Common.

93. White-breasted Cuckoo-shrike, *Coraeina hypoleuca*, A. and C. Observed breeding A.
94. Jardine Caterpillar Eater, *Edoliisoma tenuirostre*, C. Quite common.
95. White Winged Triller, *Lalage tricolor*, C. First noticed 6/10/47.
96. Varied Triller, *Lalage leucomela*, C. Quite common.
97. Southern Figbird, *Sphecotheres vieilloti*, A. B. C. and E. Observed breeding A. and E.
98. Red-backed Wren, *Malurus melanocephalus*, A. B. and C. Very common.
99. White-breasted Wood Swallow, *Artamus leucorhynchus*, A., B., C. and D. Very common.
100. Black Faced Wood-swallow, *Artamus melanops*, A., B. and C. Not in large numbers.
101. Little Wood-swallow, *Artamus minor*, C. Occasional pairs.
102. Mistletoe Bird, *Dicaeum hirundinaceum*, A., B., C. and E. Very common.
103. Spotted Pardalote, *Pardalotus punctatus*, C. Twice noted.
104. Black-headed Pardalote, *Pardalotus melanocephalus*, C. Occasional.
105. Yellow Breasted Sunbird, *Cyrtostomus frenatus*, E. only. One new nest observed on eave of house Arcadia Bay.
106. White-throated Honeyeater, *Melithreptus albogularis*, A. Common in the gums.
107. Brown Honeyeater, *Gliciphila indistincta*, C. Common. Breeding here.
108. Rufous Throated Honeyeater, *Conopophyla rufogularis*, C. Common.
109. Yellow Honeyeater, *Meliphaga flava*, A., B. and C. Common.
110. White-gaped Honeyeater, *Stomiopera unicolor*, A. Common.
111. Noisy Miner, *Myzantha melanocephala*, B. and C. Very common.
112. Blue-faced Honeyeater, *Entomyzon cyanotis*. Very common and noisy.
113. Silver-crowned Friar-Bird, *Philemon argenticeps*, C. and E. Two records.
114. Noisy Friar-Bird, *Philemon corniculatus*, A., C. and E. Common.
115. Little Friar-Bird, *Philemon citreogularis*, B. and C. Common and nesting C.
116. Australian Pipit, *Anthus australis*, C. Occasional.
117. Horsfield Bushlark, *Mirafrja javanica*, C. Common in long grass feeding on hoppers.
118. Zebra Finch, *Taeniopygia castanotis*, A., B. and C. Countless numbers; breeding in all districts.

To be Continued

Townsville and District Naturalists' Club

President: K. Kennedy, Esplanade & Rose St., Kissing Point.

Secretary: J. H. Holliday, P.O. Box 456, Townsville.

The Club meets usually on the first Friday of the month.

MEETINGS

January 9th, 1948: Lecturer—Mr. C. Freeman. "Unusual Types of Plants Found in North Queensland."

February 6th: Lecturer—Mr. Perkins. "Meteorology."

March 5th: Lecturer—Mr. S. Hopkins. "Scoutcraft."

FIELD EXCURSIONS

January: To Rollingsstone.

February: To Cape Pallarenda.

March: To Kissing Point.

KISSING POINT

The March Field Day of the Townsville and District Naturalists' Club was held at Kissing Point. In past years this locality was a camping place and one of the corroboree grounds of the aborigines, and W. Robertson (Bringa) gives a vivid description of a corroboree which took place in 1884 when the war correspondent, Sir Archibald

Forbes, visited Townsville. In those days the mangroves extended almost to the base of the hill which constitutes the Point, and with the swamps on one side and the sea on the other, a good supply of food was assured to the natives. Now the only evidence of their occupation is an occasional stone artifact found there. Members of the Club met at the Ken-

nedy Museum of Music close by which is built on the site of an aboriginal midden. Here the collection of primitive musical instruments from various parts of the world was inspected and a lecture given on the method of playing them. It was noted that primitive man has to go to nature for materials to construct his instruments of music, and that reeds, bamboo, triton shells, elephant tusk, hollow bone, and other natural objects have been utilised.

The party proceeded to Pandanus Beach and selected a camping spot under a Tamarind—an exotic tree from the East Indies.

The headland is composed of pink and grey granite, covered in most places with a thin coating of soil. At the base of the cliff near Pandanus Beach is a dyke of basalt, averaging 2 feet in thickness, penetrating the granite; in other places quartz veins were noticed.

The origin of the name Kissing Point is not definitely known. Doherty, in his Townsville Book states that it was originally called Red Cliff Point—a much more suitable name. He further mentions that a report (authority un-

stated) dated Dec. 7, 1864, describes the proposed site of Townsville:—"It is situated between two points, the west called Kissing Point, and the east Darling Point, off which lies an island" (Magazine Island). It seems therefore that the name Red Cliff Point ante-dates 1864. It is quite possible that Kissing Point is an anglicised pronunciation of an aboriginal place name for Robertson tells of an aboriginal calling it "Kissum Point." Soon after the white occupation of the district a fort was built on the Point and at the present day an old muzzle loading cannon still lies on the summit.

Plants in flower growing near the beach and on the cliffs were *Ipomoea pes-caprae*, so called because its leaves bear a fanciful resemblance to a goat's hoof; the scented-leaved *Pterocaulon glandulosum*; the blue flowered *Commelina cyanea*; and the pink and white flowered varieties of *Lochnera rosea*; *Portulaca bicolor*; and the straggling blue flowered *Vitex ovata*. The only fern was the drought resisting *Cheilanthes Sieberi*.—K. Kennedy.

FIELD OBSERVATIONS IN APRIL

For our first outing after the summer recess and to begin the new series for 1948 the valley of the Little Mulgrave was selected and on Sunday, April 18th, a party of 24 members took part in what proved a most delightful and productive excursion.

With a mid-morning rendezvous at the bridge and operations centred about half-a-mile up-stream, small parties combed the immediate surroundings for items of particular interest.

Observers from the creek bank reported a variety of aquatic life. Mention must be made of quite large specimens of the beautifully marked Spangled Grunter (*Therapon unicolor*), which were easily attracted by the splash of a few pebbles on the surface of the water.

These, together with numerous Gar (*Zenarchopterus dispar*), were of sufficient size and activity to make speculation on the inhabitants of overhanging banks and deep shady pools somewhat intriguing.

During the day the nets of our butterfly hunters yielded a haul of such variety that a brief exhibition to the assembled company was possible, with representatives of many species evident from the familiar Wanderer to tiny multi-coloured beauties.

As is usual on these outings, an accurate list of identified birds was kept by several members and yielded no less than 33 distinct species of the feathered tribe actually observed.—R. B. Williams.

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at School of Arts, Shields Street, Cairns.
usually on second Tuesday in each month, at 8 p.m.
Next Meeting, Tuesday, 8th June, 1948

MEETINGS

24th February, 1948: Special Meeting. Address by Mr. L. J. Brass, leader of the Archbold Cape York Expedition of 1948:—"Collecting in South Africa."

9th March: Lecture by Dr. Geo. Tate, Curator of Mammals, American Museum of Natural History:—"The Natural Features of Australia and South America Compared."

13th April: Lecture by Mr. S. E. Stephens, President, N.Q. Naturalists' Club:—"Aboriginal Art Galleries."

11th May: Members' Night. General discussion on exhibits.

NEW MEMBERS ELECTED

9th March: Mr. P. A. Tulk, 153 Esplanade, Cairns; Mrs. P. A. Tulk, do; C. Le Roy, Big Tableland, Cooktown; R. B. Beaman, Stratford (Junior).

13th April: W. J. Jordan, Miles St., West Cairns; W. Courtney, Miles St., West Cairns; R. A. Hunt, Texas, S.Q.

11th May: J. W. Turnbull, 432 Severin St., Cairns; G. McLoughlin, Abbott St., Cairns (Junior).



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